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USSR Report

TRANSPORTATION

No. 13

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SPECIFICATIONS FOR YAMZ-239F DETAILED

Moscow AVTOMOBIL'NYY TRANSPORT in Russian No 4, 1980 p 50

[Article by A. Ovsyannikov: "New Large Motor Vehicle Train"]

[Text] The principal trends with regard to raising the effectiveness of the vehicles and trailers being produced by the BelavtoMAZ Production Association include realizing further improvements in their technical level, quality and operational indicators and in their reliability and durability, lowering the labor-intensiveness of servicing work and metal consumption, increasing the service life, expanding the characteristics of the rolling stock for different branches of the national economy and also for various climatic conditions, improving the safety of the vehicles and activating those operations which serve to reduce contamination of the environment. These trends are embodied in the creation of the MAZ-6422 + 9389 large container-carrying motor vehicle train, which has successfully passed its acceptance tests and has been recommended for production

The first industrial batch of motor vehicle trains consisting of the MAZ-6422 triple-axis truck tractor and the MAZ-9389 triple-axis semitrailer container carrier was produced at the Minsk Motor Vehicle Plant for the purpose of carrying out an extensive operational check.

The MAZ-6422 + 9389 motor vehicle train will be used for carrying out intercity and international freight transport operations in containers. Its load carrying capacity is 32.5 tons and it has a maximum speed of up to 88 kilometers per hour.

An improvement was achieved in the load carrying capacity of the motor vehicle train owing to a better arrangement and maximum use of the axial loads and complete weight as regulated throughout the country.

A relatively high average technical speed is provided by a YaMZ-239F engine, with a turbo-supercharger having a power rating of 320 horsepower and an eight-speed gear box.

The carrying out of the requirements, including the international requirements, in terms of active and passive safety of design and degree of comfort at the driver's operating position, and also the carrying out of the ergonomic recommendations, were achieved as a result of a new cabin, steering control, braking system and other units. Improvements were realized in smoothness of movement owing to a "softer" suspension system and cushioned seating. The stability and controllability of the motor vehicle train were improved and the noise and smoke levels and toxicity lowered.

The service life of the motor vehicle train up until capital repair, when operated on 1st category roads, is 400,000 kilometers. Moreover, it is expected that the cabin and frame will be serviceable throughout the entire service life of the vehicle and not require capital repair work.

The extensive equipping of the country's motor transport enterprises with these motor vehicle trains will make it possible to employ more extensively the method of container shipments, provide an opportunity to improve the organization of freight transport operations and reduce unproductive losses to a minimum.

Brief Technical Description of Vehicle

Weight of equipped vehicle, in kilograms	9,050
Permissible load for tractor hook-up arrangement, in kilograms of force	14,700
Complete weight of vehicle, in kilograms	23,900
Distribution of load on road from loaded vehicle, in kilograms of force:	
via forward axis	5,900
via rear bogie	18,000
Permissible complete weight of towed semitrailer, in kilograms	38,700
Load carrying capacity of motor vehicle train, in kilograms of force	32,500
Rated power of engine at 2100 min^{-1}, in horsepower	320
Maximum torque at 1500 min^{-1}, in kilograms of force per meter	114
Pneumatic tires, size	300-508P
Maximum speed of movement in high gear, in kilometers per hour	88

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MOTOR VEHICLE

SPECIFICATIONS FOR LAZ-5255 TOURIST BUS

Moscow AVTOMOBIL'NYY TRANSPORT in Russian No. 4, 1980 pp 49-50

[Article by G. Losavio, Candidate of Technical Sciences at State Scientific Research Institute of Automobile Transportation: "New LAZ-5255 Tourist Bus"]

[Text] The L'vov Motor Vehicle Plant is producing the LAZ-699 large class tourist bus, with the modifications A (commencing in 1963) and H (commencing in 1973), both of which are distinguished by contour-shaping panels in their forward and rear sections. In 1976 the All-Union Design-Experimental Institute of Motor Vehicle Construction developed a technical task for the new LAZ-5255 model tourist bus, in which the consumer requirements developed by NIIAT [State Scientific Research Institute of Automobile Transportation] and approved by the RSFSR Ministry of Motor Transport:

...improving passenger comfort, improving the working conditions for the driver and increasing the capacity of the bus, improving the thrust-dynamic speed characteristics, achieving improvements in fuel economy, reducing the labor-intensiveness involved in manufacturing the bus and labor expenditures for servicing and repair operations and realizing improvements in safety, reliability and durability.

This new bus model, in terms of its technical-operational characteristics, must be superior to the LAZ-699H, which is still being produced. In 1978, experimental models of the bus underwent testing by a state acceptance committee and they were recommended for production, provided certain shortcomings which surfaced during laboratory and operational (motor transport establishments) testing are eliminated. During 1980, production of the bus will commence at the L'vov plant.

The LAZ-5266 tourist bus will be produced in various arrangements depending upon the degree of comfort and capacity desired. The basic model will accommodate 43 passengers. The bus will offer no additional conveniences. If the client so desires, a coat stowage compartment can be added to the bus, with the passenger capacity being reduced to 40. If a coat stowage

compartment, a refreshment bar and a table with four seats are added, then the passenger capacity of the bus drops to 30. The equipping of the bus with an air conditioner (installed on the roof or in the baggage compartment), a toilet, coat stowage compartment, refreshment bar and a table with four seats lowers its capacity to 28 passengers.

If requested by the client, additional comforts can be installed in the bus in the form of a television set, video tape recorder and radiotelephone. This Lyuks model is used for international tourist trips.

The design of the LAZ-5455 is safer than that of the LAZ-699N. The new model has three emergency hatches, each measuring 600 X 800 millimeters, which open automatically when the doors become jammed, and two windows on the left panel with a mechanism for removing the glass. The bus is equipped with two energy-absorbing (up to a speed of 5-8 kilometers per hour) bumpers. Soft passenger seats are arranged crosswise to the direction of movement of the vehicle. The baggage compartment space is increased by raising the floor level to 1,170 millimeters. Units can be removed from the base in order to obtain more convenient continuous baggage compartments.

The bus is equipped with liquid heating involving the use of an engine cooling system and an independent liquid heater of the Vebasto type (it simultaneously serves as an engine pre-heater) having a productivity of 22,000 kilocalories per hour. Three heaters are installed in the seating area of the bus (two along the sides and one in the rear portion). A forward heater is used for heating the working area of the driver and for blowing out the wind vents (air heating was less effective in the previous LAZ-699 model). Ventilation -- forced, with six fans which force the air through two channels. Air is supplied individually to each passenger seat, with the passenger being able to control the amount and direction of the air by turning the air delivery jet. The forced air supply system consists of air entering the bus through a hatch in the rear section of the roof. Natural plenum ventilation is carried out by means of three ceiling hatches, a nose air intake above the windshield, an air intake for the forward heater and a small sliding window in the driver's cabin.

Tests carried out on the new bus revealed that the effectiveness of the service brake system, for cold braking mechanisms, is rather high. For a speed of 60 kilometers per hour, the actual braking distance was 27.3 meters, compared to a norm of 37.3 meters (deceleration time of 7.05 seconds). A force of 7.5 kilograms was applied to the brake pedal. The uniformity of distribution of the braking forces on the wheels was satisfactory -- during braking, the bus did not deviate from a path width of 3.5 meters.

Tests carried out on the emergency brake system (one of the circuits) revealed that braking carried out by the forward circuit, from a speed of 60 kilometers per hour, produced a torque of 70.2 meters, compared to a

norm of 55 meters (that is, worse than the required effectiveness); braking carried out using the rear circuit produced a torque of 42.6 meters, compared to a norm of 55 meters, that is, it exceeded the required effectiveness.

Braking carried out using the parking brake system (emergency) produced a braking distance of 53.5 meters, compared to a norm of 55 meters.

A test carried out on the type I (twenty-fold braking) also revealed satisfactory effectiveness for the service braking system: braking distance was 32.5 meters, compared to a norm of 40.1 meters.

The smoothness of movement was evaluated using the method of comparing the data obtained against the values recommended in ISO [International Organization for Standardization] 2631 No. 74 for vibrational accelerations in the driver's and passengers' seats, when the bus is moving at a speed of 30, 50 or 70 kilometers per hour over Type I roads, or at speeds of 30, 45 or 65 kilometers per hour over Type II roads.

The tests revealed that the driver of an LAZ-5255 bus can perform continuously, with no reduction in reliability of control (labor productivity) caused by fatigue, for a period of 8 hours on Type I roads and for 4 hours on Type II roads.

The installation of a diesel engine in a LAZ-5255 bus will serve to reduce the toxicity of the air both in the passenger area of the bus and in the environment. The creation of this bus was predicated upon high indicators for reliability, durability and progressive norms for technical servicing: the bus has a service life of 450,000 kilometers prior to capital repair work being required and the service life of the units -- 250,000 kilometers.

Initial technical servicing is carried out after 5,000 kilometers of use and the second -- after 20,000 kilometers. The specific amount of labor required for technical servicing for 1,000 kilometers is 7.3 man-hours and for current repair operations -- 7.5 man-hours.

Technical Characteristics of the LAZ-5255 Bus (Based Upon Test Results)

Length, in mm	11,000
Number of passenger seats	43
Capacity of luggage space, in m^3	6.7
Weight of equipped bus, in kg	10,390
Complete weight of bus, in kg	14,670
Distribution of load on road, of equipped bus with normal capacity:	
via forward axle	3,310
via rear axle	7,080
Maximum speed in high gear, in kilometers per hour	110

Time required for accelerating to speed of 60 kilometers per hour, in seconds	28
Acceleration time required to cover a distance of 400 meters, in seconds	34
Steepest slope covered when moving at the established speed, with a nominal load and in low gear, in %	20
Controlled expenditure of fuel, with a nominal capacity and when moving at a constant speed of 50 kilometers per hour (not taking into account the operation of a heater), in liters per 100 kilometers	18
Ibid, for a speed of 80 kilometers per hour, in liters per 100 kilometers	25
Fuel distance (endurance) according to controlled expenditure of fuel, in kilometers	890
Outside turning radius to the bumper, in meters	12
Engine.....V-shaped, 8-dylinder, diesel, made especially for a bus	
Model.....KamAZ-740	
Maximum power for 2600 min^{-1}, in horsepower	210
Torque for 1400-1700 min^{-1}, in kilogram meters	65
Location...to the rear, longitudinal	
Working volume, in liters	10.85
Degree of compression	17
Steering system.....steering mechanism of the 5336 type with a hydraulic booster	
Gear box.....mechanical, 5-stage, 3-way, with mechanical remote control	
Clutch.....twin-disk, dry, friction with hydraulic drive, equipped with pneumatic booster	
Gimbal drive.....one propeller shaft of the MAZ-500 type	
Driving axle.....2-stage with final reduction assemblies, produced in VNR [Hungarian People's Republic] standardized with Ikarus buses	
Forward suspension.....independent, pneumatic, on two sleeve elements with built-in movement limiters and shock absorbing units. Constant height of running board is maintained by two body position regulators	
Rear suspension.....conventional, pneumatic, made out of four sleeve elements	
Service brake.....of the drum type, with pneumatic twin-circuit drive, separated for the forward and rear axles	
Parking brake (emergency system).....cylinder with spring power storage battery, pneumatic drive from the manual brake valve	

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DEPUTY MINISTER OF RAILWAYS DISCUSSES RAIL TRANSPORT

Moscow KRASNAYA ZVEZDA in Russian 11 Mar 80 pp 2-3

[Article by K. Kulayev, Deputy Minister of Railways: "Transport and Science: The Tenth Five-Year Plan — the Final Year"]

[Text] Due to the concern of the Communist Party, a powerful transport system, which has become one of the key sectors of the national economy, has been created in our country. Railroad transport occupies a particular, a leading place in this system. It accounts for about three-fourths of all of the freight turnover in the country and about 40 percent of the passenger traffic, equivalent to more than one-half of the freight turnover and about one-fourth of the passenger turnover for all of the world's railroads, the length of our lines constituting about 11 percent of the world railroad network.

Exceptionally responsible tasks have been posed for rail transportation by the 25th CPSU Congress. The operation of each enterprise, the timeliness of product delivery to the consumer and the extents of their raw material, fuel and material reserves and, in the final analysis, the effectiveness of all public production depend on the level of organization of the transportation process. Noting the shortcomings in the operation of rail transport at the November (1979) Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee and chairman of the Presidium of the USSR Supreme Soviet, emphasized the important role of the best achievements of scientific and technical thought in the radical solution of transport problems.

The article published below tells how the connection between science and the prosaic side of the steel highways is being realized today, about the prospects for

tomorrow and of the search for reserves permitting us to raise the operation of transport to a higher level.

I will give some data so readers can better imagine what a complex, diversified economy is presently determined by the concept "rail transport of the USSR." The operational length of our steel highways is more than 140,000 kilometers, i.e. 3.5 times around the equator. The fixed capital of 31 railroads exceeds R 31 billion, or there are almost R 500,000 in production capital for each kilometer of track, including rolling stock. This is twice as much as it was in the prewar years. Millions of specialists work in all sectors of rail transport. The average traffic density on our lines is 6-7 times greater than on the mainlines of the USA and the countries of western Europe, cars turn around several times more quickly here and locomotives are used significantly better.

It is difficult to overestimate the significance of precise operation of transport for development of a country's national economy. Moreover, in recent years, railroad transport, as is well known, is experiencing difficulties in fulfilling its traffic plan. This fact cannot help but alarm the workers in the sector who try to fulfill the resolutions of the 25th CPSU Congress, the directives emerging from appearances by comrade L. I. Brezhnev, general secretary of the CPSU Central Committee and chairman of the Presidium of the USSR Supreme Soviet, as well as the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Developing Rail Transport in the Years 1976-1980." Workers on the railroads are making efforts to increase the traffic rates and to overcome difficulties and shortcomings which are present in their work, and they are searching for supplementary reserves for fulfilling the plan for the 10th Five-Year Plan.

The acceleration of scientific and technical progress in rail transport is a powerful resource for increasing the effectiveness and quality of railroad operations and the growth of labor productivity. It is possible to isolate several main tendencies for introducing new equipment and progressive technology on the railroads in the current five-year plan and in the future.

One of the efficient means for increasing the traffic and carrying capacities of the lines is to convert them to electric power. Realization of the general plan for electrification of the railroads permitted us to bring the total length of lines with electric traction on them to 41,000 kilometers. Today they provide almost 54 percent of all freight turnaround. The Soviet Union has long occupied first place in the world for length and annual growth in electrified lines. Since a dc system with rated voltage of 3000 V restricts the power of the electric locomotives, we are devoting much attention to the introduction of a progressive electrification system whereby ac with a rated voltage of 25 kV will be used. This will permit capital costs to be reduced to R 20,000 per kilometer of track, copper consumption to be reduced and more powerful electric locomotives to be used. Today 16,000 kilometers of railroads have already been outfitted with such a system. A 2X25 kV electrification system will provide even greater effect.

The use of automation and remote control for power supply installations on electrified railroads will provide great advantages. For example, the "Lisna" system introduced on certain mainlines permits us to reduce attending personnel by 115 persons per 1,000 kilometers of track as well as to reduce the time for performing preventive maintenance on the contact network and traction substations, which require interruption of traffic, significantly.

Thus incorporation of scientific and technical achievements and the development of electric power engineering for the country improve the efficiency of electric traction. Therefore, in our opinion, it is necessary to at least double the rate of electrification of the railroads during the present decade.

There are large tasks ahead of us which must be solved in the area of locomotive and car construction. We are speaking, first of all, of a qualitative replacement of the rolling stock inventory and of a significant increase in new locomotive and car output. Since increasing train weight is the most important measure permitting us to increase the freight volume under conditions of limited traffic capacity, it is necessary to increase the power of the locomotives and the reliability of the diesels, the traction electric motors, the wheel-motor blocks and certain other locomotive assemblies and units. This work is under way. In particular, an experimental batch of VL80r ac electric locomotives with smooth thyristor control and regenerative braking, which permits more precise train operation modes to be selected and their weight to be thereby increased, as well as to save electricity, has been constructed. In the VL-14 dc electric locomotive, a drive system with support-frame suspension, which significantly improves the interaction of the traction part of the locomotive with the track structure, has been used. The VL-84 electric locomotive, adapted for use under the harsh climatic conditions of Siberia and the Far East is being created especially for the BAM.

Transport scientists are devoting serious attention to the problem of creating traction engines without pantographs for powerful electric locomotives to be used on the mainlines. In particular, experimental prototypes with rectifier and asynchronous traction motors have been built. However, the rates of experimental and design operations in this promising direction must necessarily be increased. This also concerns operations to create the new 4,000 hp per section diesel freight locomotive which may become the most promising type of locomotive for the lines with high traffic density which use diesel power.

Another urgent problem is the replacement and the establishment of a specific freight car inventory reserve. On one hand, its solution is associated with the broad introduction of 8-axle cars. Estimates show that use of such cars on trains running the mainlines permits us to increase their weight by approximately 37 percent. On the other hand, full conversion of the car inventory to use of roller bearings is necessary. Their introduction will permit us to reduce the number of train delays

significantly and will increase the labor productivity of car services workers and will improve working conditions and standards of production.

The proportion of specialized rolling stock grows annually in the car inventory. This permits us to increase the safety of cargoes being transported and the level of mechanization of loading and unloading operations. In particular, production of closed hopper cars for transporting grain, sugar and other food products, as well as Portland cement and mineral fertilizers is expanding.

Establishment of a highly efficient container transport system within our country is a qualitatively new stage in the development of methods for delivering freight. It is necessary to say only that the capital investments in the development of container shipments are being repaid in 1-3 years. In 1979 about 40 million tons of cargo were transported in universal containers, and of this amount, about 7 million tons were carried in large capacity containers with a gross weight of 20 tons.

However, far from everything has been done in this direction. It is necessary to increase the number of containers, particularly large capacity ones, the number of stations equipped to handle them and the rolling stock inventory for their conveyance and to improve methods for automating control of the work at container points. There is still much to be done in the development of package shipments and for raising the level of mechanization of loading and unloading operations.

Increasing the capacity of the railroad line, developing mechanization of track operations and improving repair and maintenance of track facilities is an important trend in scientific and technical progress. Let us note that by laying heavy rails (weighing up to 75 kilograms per running meter) the average weight of one running meter of rail increased by almost one and a half times over the past 20 years, and this, in turn, permitted us to increase train weight and train speeds significantly. Laying track on reinforced concrete ties and increasing the length of welded rail produces a significant effect. Working with industry, transport scientists have created heat hardened rails whose service life has been significantly increased.

Moreover, there are many specific problems in the area of track facilities. There is something here for industrial workers and scientists not only in transport, but physicists, chemists, metallurgists and welding specialists to work on.... Given the present day intensity of traffic, each broken rail causes significant train delays. Therefore further increase in rail reliability and in the other track components, the ties, fastenings, bridges, etc. is necessary.

The most important thing in the area of maintenance of track facilities is to increase the level of mechanization, which today stands at only 40 percent. A complex of machinery permitting repair and track maintenance to be mechanized to a significant extent has already been created.

Much is being done in rail transport toward development of automation and remote control equipment. For example, the dispatcher interlocking systems which have been developed will free up to 50 workers per 100 kilometers of track and will improve the carrying capacity of single-track sections by a factor of 1.4 and of double-track sections by approximately a factor of 2 (in comparison with semi-automatic blocking).

Computer technology is finding broader and broader application on the railroads. The stream of information which is necessary for control of the transport process is truly great today. Moreover, the production situation is constantly changing in rail transport. In association with this, creation of an automated rail transport control system (ASUZHT), which will become a part of the automated State information system, is continuing. The conversion to third generation computers will permit us to expand the list of solvable problems, the number of which already stands at more than 200, as well as to undertake development of a centralized system for tracing each locomotive and car involved in transport process.

The proper development of a railroad network is unthinkable without working out a long-term prognosis. The fact that the predictions cannot be restrictively departmental, but should take the interests of all sectors of the national economy into consideration, is a peculiarity of transport development forecasts. It is necessary to study the prospects for the development of new regions and to evaluate changes in freight flow from all sides.

Large and complex tasks are facing the rail transport workers. Their successful resolution determines the development of the country's economic system to a significant extent and the fulfillment of the quotas for the Ninth Five-Year Plan. Understanding the total extent of their responsibility and sensing the constant concern of the Party and the government, millions of Soviet railroad workers are working strenuously, giving their all. Transport scientists are making their ponderable contribution to the common cause. Proceeding from the tasks posed by the November (1979) Plenum of the CPSU Central Committee and the positions and conclusions set forth in speeches by the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet Comrade L. I. Brezhnev, they are continuing the tireless scientific search and are fighting to improve the efficiency and quality of the country's rail transport operations.

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CONSTRUCTION OF COMMUNITIES ALONG BAM ROUTE SURVEYED

Plans, Problems Examined

Moscow ARKHITEKTURA SSSR in Russian No 1, 1979 pp 4-12

[Article by V. Butuzov, deputy chairman of RSFSR Gosstroy and chief architect for the BAM]

[Text] History has never known a construction project on such a grand scale as the one involved in the enormously far-flung Baykal-Amur Main Line. The planners and construction workers had to resolve the most difficult technical problems and to establish in an uninhabited region modern conditions and conveniences for the life and labor of the people. Our public is therefore manifesting constant and unremitting attention to the construction of the trunk line and to the development of the zone it traverses.

An example of the manifestation of this concern was the meeting held in the spring of last year in Tynda on the subject "The Planning, Construction and Quality of the Housing and Civil Engineering for the Cities and Settlements on the BAM." The meeting was conducted by Gozgrazhdanstroy [State Committee for Civil Engineering], the Union of Architects [SA] of USSR, Gosstroy RSFSR, GlavBAMstroy [Main Administration for BAM Construction] and the board of directors for the BAM construction.

Taking part in the work of the meeting were representatives of the construction division of the CPSU Central Committee, the Amur CPSU Obkom and the oblispolkom, the Tynda CPSU Gorkom and the gorispolkom, Gosplan USSR, the Ministry of Railways, the Mintransstroy [Ministry of Transportation Construction), the Ministry of Public Health, and numerous planning and construction organizations.

At the meeting Deputy Chairman of Gosstroy RSFSR and Chief Architect of BAM V. Butuzov delivered a report on the subject "The status and quality of the planning, the practical work for the construction of populated places, and the organization of an architectural zone of influence for BAM." A report was also delivered by G. Klochanovskiy, deputy chief of the Division for the Construction and Architecture of BAM, Gosstroy, RSFSR. The basic positions of the reports were developed in communications from deputy chairman of the board of Leningrad organization of SA USSR A. Antonov, chief architect of Mosgiprotrans [Moscow State Planning Institute for Transportation Construction] V. Batyrev, deputy director of BAM construction V. Orlov, deputy director of the LenNIPP [Leningrad Scientific Research Institute for the Planning] of Civil Engineering S. Krest'yashchin, laboratory chief at the SKTB [special design and technological office] of GlavBAMstroy B. Kurdenkov, deputy chief of GlavBAMstroy I. Rozanov, workshop chief at the TsNIIEP [Central Scientific Research Institute of Experimental Planning] for Rural Civil Engineering A. Fel'dsheyn, chief specialist of workshop No 6 of the Giprogor [State Institute for the Planning of Cities] Ye. Shatsilo, and the chief specialists of the TsNIIEP for Engineering Equipment M. Gol'din. The participants in the meeting adopted appropriate recommendations on the basis of the results of the discussion of the reports and communications.

Presented below are Comrade Butuzov's article dealing with the basic questions delineated in his report, a brief exposition of the theses contained in A. Antonov's communication on the tasks of the Union of Architects USSR relative to the establishment of the Baykal-Amur Main Line, and Comrade A. Fel'dshteyn's communication on the practical work of the planning and construction of permanent settlements on the BAM, using industrial wooden structures.

The pace of the construction of the Baykal-Amur railroad main line is being stepped up with ever increasing rapidity. Approximately 1500 kilometers of tracks have been laid, a large number of bridges has been built, tunnels are being drilled, and many other transport installations are being erected. The construction workers, who are laying the trunk line under unusual natural and climatic conditions with a yearly temperature drop exceeding 100 degrees Celsius, the presence of permafrost, and a high level of seismicity, are encountering extraordinary difficulties and displaying true labor heroism.

BAM is not just a railroad bed. It is an artery which makes viable an enormous region which is very rich in its natural resources. Undergoing development in the BAM zone of influence are various types of industry and

agriculture entailing a considerable increase in population. Consequently, there is need to develop and improve the cities and settlements already here, to build new ones, and to fulfill enormous volumes of work not only in industrial construction but also in housing and civil engineering.

At the time of his trip to the cities of Siberia and the Far East in April of last year CPSU Central Committee General Secretary and Chairman of the Presidium of Supreme Soviet USSR Comrade L. I. Brezhnev said in Irkutsk at the meeting with members of the bureau of the CPSU Obkom: "The Baykal-Amur Main Line is a construction project of the era of developed socialism and it is important to see to it that the people who are building this line now have every opportunity to study and to master the vocations which are necessary both for the construction project and for the future large enterprises of this region. We must prepare ourselves and we must be exploiting the unique natural resources on hand along the trunk line under construction.

"In the regions of the construction we must create good living conditions and we must devote more attention to the construction of housing, clubs and schools; we must do this with the necessary scope, at the proper technical level, and with due regard for the climatic conditions."

A good deal has already been done to accomplish the tasks assigned by Comrade L. I. Brezhnev to the BAM construction workers. Life has rapidly taken hold in the recently wild and uninhabited region and work is humming. The population there is growing and the cities and settlements are being transformed and provided with public service and amenities. And the great creative labor of the planner is responsible for all this.

Three cities and 55 settlements are located on the BAM route. And whereas at present the population resides primarily in the settlements, in the future it is expected that 80 percent of the population will be concentrated in the cities: in the existing cities of Tynda, Ust'-Kut and Komsomol'sk-on-Amur and in the cities of Udokan and Urgal, newly organized on the basis of settlements.

For several years now work has been done on a large scale to provide plans for the construction of cities and villages in the BAM zone. The entire route of the line is divided into six sectors. The general planner of the railroad settlements in the individual sectors is the Mosgiprotrans [Moscow State Planning Institute for Transportation Construction] and the general planner for BAM comprises the Tomsk, Siberian, Leningrad, Kiev and Far East institutes Tomskgiprotrans, Sibgiprotrans, Lengiprotrans, Kievgiprotrans and Dal'giprotrans respectively. The planning of cities and settlements is assigned to 64 Mintransstroy planning organizations of the Union and autonomous republics, and the various oblasts and cities. Of these organizations 45 are operating under the patronage assistance procedure and 51 populated points have coordinated or approved general plans, detailed planning drafts, and other technical documentation.

One can cite quite a number of facts which indicate that the planners have achieved a certain degree of success in the general plans and in the volume and space decisions relating to the construction of settlements. For the settlement of Kireng (Rostovgrazhdanproyekt [Rostov Civil Engineering Planning]) the general plan schematic and the draft plan were compiled with careful regard for the terrain features of the locality and with successful application of the system of "green areas" penetrating the construction. In Severobaykal'skiy Rayon (Lengiprogor [Leningrad Branch of the State Institute for the Planning of Cities]) they have done a great deal to insure maximum retention of the existing vegetation, etc. A high qualitative level has been attained in working out the plans for the settlements of Marevyy (Tul'sgrazhdanproyekt [Tula Institute of Civil Engineering Planning]), Urgal (Ukrgorstroyproyekt [Ukrainian Institute of City Construction Planning]), Chil'chi (Lengiprotrans) and LenNIIPgradostroitel'stva [Leningrad Scientific Research Institute for the Planning of Town Construction]), Niye (Tbilgorproyekt [Tbilisi Institute of City Planning]), Tayur (Armgosproyekt [Armenian Institute of City Planning]), and a number of others.

This listing of the successes could be extended even further. But for the purposes of this undertaking it would probably be more desirable to focus attention on the task of revealing the existing deficiencies and the ways to eliminate them.

Unfortunately, many general plans, detailed planning drafts, and technical plans are approved by Gosstroy RSFSR only after they have been submitted a number of times. This applies to the settlements of Ust'-Nyuzhka (Chelyabinskgrazhdanproyekt [Chelyabinsk Institute of Civil Engineering Planning]), Dyugabul' (Perm'grazhdanproyekt [Perm' Institute of Civil Engineering Planning]) Lopcha (Omskgrathdanproyekt [Omsk Institute of Civil Engineering Planning]), Ikab'ya, Khani, Olekma and Chil'chi (Lengiprotrans), Tungala, Zhugda, and Meunchik (Uralgiprotrans), Berkakit (Kuzbassgrazhdanproyekt [Kuzbass Institute of Civil Engineering Planning]), and a number of others. Returned for revision and now in the process of being revised are the basic planning documents for the settlements of Angoi, Uoyana, Chary, Fed'kina Klyucha, Etarkana and Baralusa.

This situation is due to the sizable number of deficiencies in the work of the planners. These deficiencies are found in the schematics and templates for the adopted planning and construction procedures, which do not always conform to the local requirements; the inadequate compactness of the construction and the failure to maintain the proper scale for the streets and squares, which copy the architectural modes employed in the large cities; in a number of cases inadequate estimating of the prospects for development of the populated places. The planning and construction of centers is not always coordinated from the composition standpoint with the housing construction. There is unjustified use of five-nine-story buildings for settlements with small population. They have not worked out plans for color schemes in the construction and for small structures and greenery. In subject matter and volume the materials submitted, as well as the necessary agreements, do not conform to the current regulations.

We know that we must resolve our national economic, social and ideological problems through the instrumentalities of town construction and architecture. However, the attitude toward the solution of these problems displayed by some of the planning organizations, various representatives of the customer and the construction directors is often rather indifferent. They frequently rate the importance of the town construction and architectural decisions only on the basis of the capital investments applied to solution of the construction problems and they do not take adequate account of the aesthetic requirements.

And we should bear in mind the worthwhileness of the task of setting up a unified architectural set-up. Unified not in the sense of sameness but a unity obtained through the use of contrast. It is essential, in particular, that the stations and other service and technical buildings have the general characteristics of the BAM route "architectural expertise" which sets this line apart from the others. At the same time, every city and settlement must be distinctive as to volume and space planning and as to the architectural design of the individual buildings and their components. In this sense, the efforts of some of the patronage planning organizations to keep "their own" features in the architecture of the populated places are a valuable asset and they help to create cities and settlements which are unlike the others and to introduce the necessary variety. There is need for a creative attitude toward this task both on the part of the planners who compile the standard plans and those who use these plans in construction.

Since the individual and standard plans for the stations and service and technical buildings provide for the use of various structures and materials, these installations are also very diverse in appearance and the construction of them in a single square makes it very difficult to create unified groupings. Consequently, Gosstroy RSFSR has allowed the patronage planning organizations to make appropriate corrections in the plans.

It should be noted that the Mosgiprotrans institute is not doing an adequate job of performing the functions of a general planning organization in respect to town construction and architecture; the institute planning group concerned with BAM does not include an architect.

Notable among the projects carried out with good volume and space planning is the plan for the unified station at the Berezovka terminal (Sibgiprotrans, architect V. Avksentyuk). However, there too there is need to modify the components.

A successful planning job is being done on the railroad station in Tynda (Mosproyekt [Institute for the Planning of Housing and Civil Engineering Construction in the City of Moscow]-1, Workshop No 13 jointly with Mosgiprotrans, architects V. Gudkov and A. Kozlov). Different variants have been worked out for the volume planning; the interior space has been

skillfully arranged with two tiers of windows; and the small buildings located in the station area are combined in a cooperative-type complex.

There are examples of successful redoing of standard plans for trade and social centers and railroad stations, tying them in with the housing construction (Tbilgorproyekt, architect V. Tsinadze and Armgosproyekt, architect R. Andinyan).

Through their joint measures, Gosgrazhdanstroy, Ministry of Railways, Mintransstroy and Gosstroy RSFSR determined what standard plans for residential and public buildings should be used when constructing cities and settlements in the BAM zone. Approval was given for 11 series of standard plans for large-panel and large-block brick and wood dwelling houses. These series consist of more than 100 plans for houses and section units designed for various construction conditions. In addition, in 1979 there will be put into operation about 70 plans for houses, section units and dormitories. Also compiled have been 74 standard plans for cultural and personal service buildings and the work on 14 more plans is nearing completion.

The basis for the central sector of BAM is a series of 122 standard plans for dwelling houses compiled by LenZNIIEP [Leningrad Zonal Scientific Research Institute of Experimental Planning](architect A. Nikolayev, engineer L. L'vov). With the planning decisions calling for section units, the series conforms to the local requirements but only one variant of the facades is being employed and there is no provision for summer quarters. The homes of this series are supposed to be produced by the Shimanovskstroyindustriya [Shimanovsk Construction Industry Combine] but unfortunately the architects on the project are taking hardly any part in getting the series into production. As a result, the house already built is far from perfect, does not conform to the approved plan, and in its quality is inferior to the houses of this series built in the North Baykal area from products manufactured by the Leningrad home construction enterprises.

For the construction of populated points in the western sector of the route, they adopted complex series 135 of the design bureau for reinforced cement of Gosstroy RSFSR, a series designed for various climatic conditions and varied seismicity. To date they have compiled 54 plans for dwelling houses, dormitories and public buildings in this series. Assigned to supply the products for this series is a large-paneled home construction plant in Tayshet with a capacity of 70,000 square meters of overall area a year; this plant is planned for operation beginning in 1982.

For the construction of populated places in the eastern sector of BAM there has been adopted complex series 125 of the KB [design bureau] for reinforced concrete. The supply of products for this series is to come from the existing large-panel home construction plant in Komomol'sk-on-Amur, Mintyazhstroy [Ministry of Heavy Machine Building] with a capacity of

40,000 square meters a year (for the future it is planned to increase this capacity to 70,000 square meters).

In the BAM zone construction is now in progress in 19 populated points and in the future construction will be developed in another 36. The work has revealed a number of deficiencies in the planning and organization of construction. The planning and construction of engineering installations, networks and roads is lagging behind the schedule. The plans for putting cultural and personal service installations into operation are frequently not being fulfilled. In Tynda, Alonka, Niya, Tayura, Berkakit and a number of other populated points the lack of engineering networks and installations is delaying the putting into operation of dwelling houses and public buildings. There are frequent violations of the approved general plans for populated points and the industrial enterprises are sometimes set up in places for which no general plans have been provided.

The progress of construction of most of the populated points on the BAM route is adversely affected by the failure to organize permanent authors' supervision in them. Also, the local architectural organs frequently fail to carry out their functions for the maintenance of town construction discipline.

The existing situation makes it apparent that the establishment of favorable conditions for the construction and functioning of cities and settlements on the BAM route requires the adoption of a number of measures, particularly the organization of comprehensive planning of the designing and flow-line construction of dwelling houses, cultural and personal service and municipal service installations along with prescheduled fulfillment of the work for construction of installations for engineering equipment networks and roads.

Approximately 40 temporary settlements were constructed on the BAM route; for them large amounts of funds were expended and valuable territory was used. Because of the rather lengthy stay of the construction workers and other population groups in these settlements, considerable capital was invested in providing public service and amenities and temporary cultural and personal service buildings, sports installations, clubs, etc., were erected. However, these settlements are nonetheless of limited value. And yet in GlavBAMstroy there is a tendency to put many temporary settlements into operation as permanent accommodations for the railroad operational personnel.

The concept "temporary" implies that the settlement will be disbanded after use. But of course it would not be correct to resolve this question on an across-the-board basis. Such temporary settlements as Berkakit, Lapri, Urgal, Niya and others should not be discarded; they can be used in the future for permanent residences, for Pioneer camps, for the organization of recreation areas, and for other purposes if they are provided with the appropriate engineering and other facilities and organically linked with the construction of permanent settlements.

In the BAM zone construction temporary or so-called prefabricated dwelling houses have not proved worthwhile. Instead of the five-time turnover calculated for them they are usually assembled and disassembled not more than two or three times and with great losses. Since industry does not produce prefabricated buildings for cultural and personal service purposes, for the construction of these they use dwelling houses which are being dismantled and some of the plant products are also not used.

A convincing case can be made for the greater desirability of using permanent settlements for temporary residence for the construction workers and later transferring them to the operational workers and using the funds allocated for temporary settlements for the construction of permanent ones. For this purpose it is necessary to adapt the Nizhneudinsk stock container buildings plant not only for the production of materials intensive prefabricated buildings of this design and moreover with a limited container products list but also to organize production of container paneled residential and public buildings which meet all of today's requirements for their capital construction in the permanent BAM settlements.

The institutes of Gosgrazhdanstroy, Mintransstroy and Gosstroy USSR have already done and are doing concrete work for the planning of buildings for the permanent settlements and for the construction of them.

In the matter of improvement of the architectural quality of the BAM cities and settlements, a great deal of importance attaches to the extent to which the requisite materials are supplied for the construction. In this zone there are enormous deposits of various kinds of natural stone which can be used for the manufacture of structures for the facings of buildings. Despite the one-time outlays required for the opening of quarries and the organization of production, the use of these materials pays for itself by reducing shipments and it increases construction efficiency. The SKTB [special design and technological office] of GlavBMAstroy and the Ministry of Geology RSFSR have done concrete work in preparing suggestions for the use of natural materials in construction but the pace of the work is slow and the volume of it low. There is need to use every possible means to expedite it.

Further successes in construction in the BAM zone of influence will depend largely on improvement and development of the base for industrial house construction. The work of the house-building enterprises must be subordinated not only to fulfillment of the quantitative tasks but also to the task of enhancing the aesthetic qualities of construction. The form of the organization of these enterprises must be modern. But if we take the Shimanovskstroyindustriya combine as an example, we find that the work in it is poorly organized: there is large turnover of workers and they have not organized production of porous clay filler from the local clays on hand; as a result the filler and perlite used have to be shipped in. They are not producing the full list of products and they are of low quality besides.

On the basis of this enterprise and the TsentroBAMstroy [Central Trust for BAM Construction], it is necessary to set up an independent house construction combine and to take measures for production of the full list of products for construction of dwelling houses in series 122 and also in series IIS-004 for public buildings. In addition, this combine should organize production of items for small architectural structures and for the public services and amenities of the populated places.

In the BAM construction project substantial amounts of funds are being expended for visual agitation and propaganda and decorative and monumental work. But this work has been poorly organized--the Union of Architects USSR and its organizations are not giving the proper attention to this work. As a result, the artistic level of much of the work is low. The union of artists, the republic unions, and the local branches need to organize systematic joint work of the artists and the planning organizations to synthesize the monumental and decorative art with the architectural, while maintaining a high ideological and aesthetic level for this work.

In April of last year the service of chief BAM architect was organized within the framework of Gosstroy RSFSR. The purpose was to improve the town construction work and architecture and to pursue a unified technical policy in the building of cities and settlements and in the construction of housing, civil engineering and technical service installations in the zone of the Baykal-Amur Main Line. In line with the approved statute, a number of tasks were assigned to the service of BAM chief architect. These are, in particular, to maintain a high level of architectural, technical and economic capability for the plans and blueprints encompassed in the detailed planning and construction of cities and settlements as well as for the plans for dwelling houses, cultural and personal service installations, and technical service and other buildings and installations erected in the zone of BAM construction, regardless of the departmental subordination of the builders and the planning and construction organizations. Another such task is to monitor the quality of the construction and the adherence to the procedure for inspecting housing and civil engineering installations for operation, etc.

Currently in progress is the work of reviewing and correcting the general plans for the BAM settlements in accordance with the instructions set forth by Comrade L. I. Brezhnev on the occasion of his trip to Siberia and the Far East and in accordance with the decisions of the July (1978) plenum of the CPSU Central Committee. The goal as established is to obtain maximum enhancement of the effectiveness of the capital investments, improvement of the living conditions for the population, and curtailment of the construction of temporary settlements. There is also under way a review of the individual and standard plans for residential and public buildings, the plans for civic improvements and landscaping, the elements of monumental and applied art, and the color options in construction.

To streamline and reduce the multiplicity of steps in the coordination of plans and to obtain greater efficiency in comprehensive solution of the problems which arise, there is being set up a section on the affairs of BAM construction and architecture. This section is to include responsible representatives of all the concerned ministries and departments, and leading specialists in the field of town construction and planning and construction of transport, residential, public, and other buildings; also, executives of the construction and architectural affairs divisions of the republics, krays and oblasts traversed by the BAM and representatives of the creative unions of architects and artists of USSR.

To exercise daily line control over implementation of the planning decisions and the quality of the construction of populated places and the various buildings and installations, the republic, kray and oblast administrations and the construction and architectural affairs divisions of the autonomous republics, krays and oblasts traversed by the BAM have assigned additional staffs of senior inspectors and architectural control inspectors to function directly on the BAM route in Kireng, Severo-Baykal'skiy, Chara, Tynda, Neryungri and Urgala. The inspectors enjoy all the prerogatives of the representatives of Gosarkhstroykontrol' [State Architectural and Construction Control] and are subordinate to both Gosstroy RSFSR and the appropriate republic, kray and oblast construction and architectural affairs divisions. For these workers there have been established the wage increments prescribed for the BAM construction workers. Unfortunately, to date not all the local organs for construction and architectural affairs have as yet employed the additional personnel allowed them.

The development of industry, and with it the construction of cities and other populated places, is not just limited to the territory along the BAM route. The general scheme of rayon planning defines a BAM zone of influence with an area comprising 1.6 million square kilometers.

Said Comrade L. I. Brezhnev in his June 1975 speech to the voters of the Bauman election district in Moscow: "The scope of the work on BAM emphasizes with special urgency the need for a skillful approach to all the problems of this great construction project and the need to resolve the current problems not under the influence of the natural flow of events but on the basis of precise and scientifically validated ideas on the prospects for the comprehensive development of this vast region." And the scientific findings indicate that the predominant factor in enhancing the effectiveness of the opening up of the BAM zone of influence must be the completeness of its social and economic development.

Because of the ever growing importance of the regions of Siberia and the Far East in the country's economics and because of the formation in these regions of a number of large territorial production complexes for the development of their natural wealth, it is obviously desirable that the future state long-range and current plans for the country's economic and social development should incorporate consolidated plans for the complex development

of Siberia and the Far East. It is desirable also to include in the state plans the preparation of programs to resolve the major territorial problems and programs for the formation and development of the most important territorial production complexes and the groups of enterprises technologically and economically interrelated with the overall system of economic, transport, social and cultural service. It is essential that consolidated plans of capital construction be prepared for these complexes. One of these complex programs should, we believe, embrace the social and economic development of the BAM zone of influence.

As a result of the interrelated, well-planned and well-organized work of all the participants in the planning, designing and construction, the BAM should become part of their country's history, not only as a vitally important transport artery but as a region enriched by the well-built cities and settlements of modern architecture, where people will live and work for the welfare of our native land.

Architectural Problems

Moscow ARKHITEKTURA SSSR in Russian No 1, 1979 pp 13-14

[Article by A. Antonov, member of the board of the USSR Union of Architects and deputy chairman of the board of the Leningrad Organization of SA USSR]

[Text] The board of the Union of Architects [SA] USSR and its permanent creative commissions are focusing considerable attention on the problems connected with the establishment of an environment for the normal work and vital activity of the people on the BAM.

The town-construction commission, for example, took part in the Grosgrazhdanstroy appraisal and review of the general scheme for the rayon planning of the territories adjacent to the BAM and reviewed and discussed the general plans and designs for the detailed planning of the cities of Tynda, Ust'-Kut and Neryungri. The commission on architecture for residential buildings discussed and made recommendations for improvement of the variants of the standard plans for large-panel unit sections and dwelling houses for the construction conditions existing in the various regions of the BAM. The standard and experimental plans for dwelling houses and public buildings for construction in the central BAM sector were repeatedly reviewed in the expanded meetings of the commission for the planning and construction of the cities of the Far North. The section on transport installations in the commission on architecture of public buildings discussed the standard plans for the railroad passenger station buildings.

In the spring of 1978 the board of the SA USSR, which was conducting a seminar for advanced training of the architects of the Far North, invited to it the architects who are planning the construction of the BAm cities and

settlements in the central and southern zones of the country. Unfortunately, only 15 of the architects who are working for the BAM took part in the work of the seminar. It would probably be desirable for the board of the SA USSR to consider conducting in 1979 a special seminar for advanced training of the architects who are doing the planning for the BAM zone.

To implement the suggestions and observations advanced by CPSU Central Committee General Secretary and Chairman of the Presidium of the Supreme Soviet USSR Comrade L. I. Brezhnev in the period of his trip to Siberia and the Far East, the Union conducted a meeting bringing together architects of the Far East and the architects of Leningrad; they reviewed the plans prepared for the BAM zone and they discussed the problems entailed in reducing the migration of the population in the remote regions.

The Moscow and Leningrad organization of the Union of Architects USSR sent groups of young architects to the BAM and these groups participated in the work of improving the external appearance of the buildings and installations and organizing the public services and amenities in the temporary settlements for the construction workers. Upon their return, they prepared reports and exhibitions.

To draw the attention of the architectural community to the problems entailed in shaping an architectural environment on the BAM, a number of journals are publishing articles on the problems of housing and civil engineering construction on the BAM and the organizations of the Union are addressing these problems in reports and communications. For example, in 1976 at the zonal meetings of the Far East organization in Yakutsk discussions were held on the draft for the detailed planning of Neryungri and in 1977 in Yuzhno-Sakhalinsk a report was heard on the status of the planning and construction of the cities and settlements in the BAM zone.

An important factor in the unity of the architectural judgments with respect to the BAM is represented by the railroad station buildings. In the past the leaders of the Union of Architects became acquainted with the interesting competition prize work "An Album of Plans of Railroad Stations for BAM," which suggested a unified style design for the stations of various capacities. However, instead of implementation of this suggestion, the development of the standard plans for the station buildings was assigned to the Mosgiprotrans [Moscow State Planning Institute for Transportation Construction], which to date has not completed this work.

In reviewing the new Mosgiprotrans—compiled standard plans for 25 and 50-person stations the transport installations section of SA USSR failed to display any dedication or high standards and approved plans with an inferior architectural level and shallow choices and excesses. The transport installations section of the Union board must provide the requisite creative assistance for the architects of Mosgiprotrans.

The organizations of the Union of Architects USSR and of the republics, krays, oblasts and cities, that is, the organizations which look after the construction of the populated points of BAM, must consider one of the principal directions of their work to be the rendering of creative assistance in the planning and authorship supervision of the construction. They should discuss the work of planning and construction on BAM and they should recruit the most skilled architects for this work.

Uses of Wood in Construction

Moscow ARKHITEKTURA SSSR in Russian No 1, 1979 pp 15-16

[Article by A.Fel'dstein, chief of a workshop of the TsNIIEP of rural civil engineering construction]

[Text] Because of the sparseness of the population, it would seem desirable in the permanent settlements of the railroad workers on the BAM route to abandon the previously adopted construction of settlements with 2-5-story dwelling houses of large-panel construction and to undertake instead the construction of wooden 1-2-story residences and public buildings made from fully prefabricated plant-manufactured structures. The present-day technical level of wooden plant house construction makes possible long-term operation of fully prefabricated wooden buildings and it provides the necessary conditions for comfortable living in these homes.

The use of plant-manufactured wooden houses for most of the permanent settlements along the BAM route is desirable for the following reasons: the wood and materials obtained for this are local construction materials for these regions; there is minimum labor input for erection of the buildings because of the high degree of plant fabrication of the components of these buildings when they are manufactured in the house construction enterprises; the light weight of the structures, despite the rather high degree of sturdiness in the glued components; the construction of the housing and public buildings can be carried out on the basis of the complete series of plans with a unified technology for manufacture of the series products.

In the construction of permanent settlements of wooden buildings it is possible in the beginning period of construction without any special labor to change the existing scheme of settlement construction organization so as to adapt it for the erection of permanent settlements. It is possible to get by with the erection of just a very small number of portable buildings to accommodate the small duty detachments of construction workers needed for the initial period of the construction job.

As the construction of a permanent settlement progresses there is no longer any need for a small work-duty settlement and the construction workers and their families are accommodated in the available housing (dormitories and apartment houses).

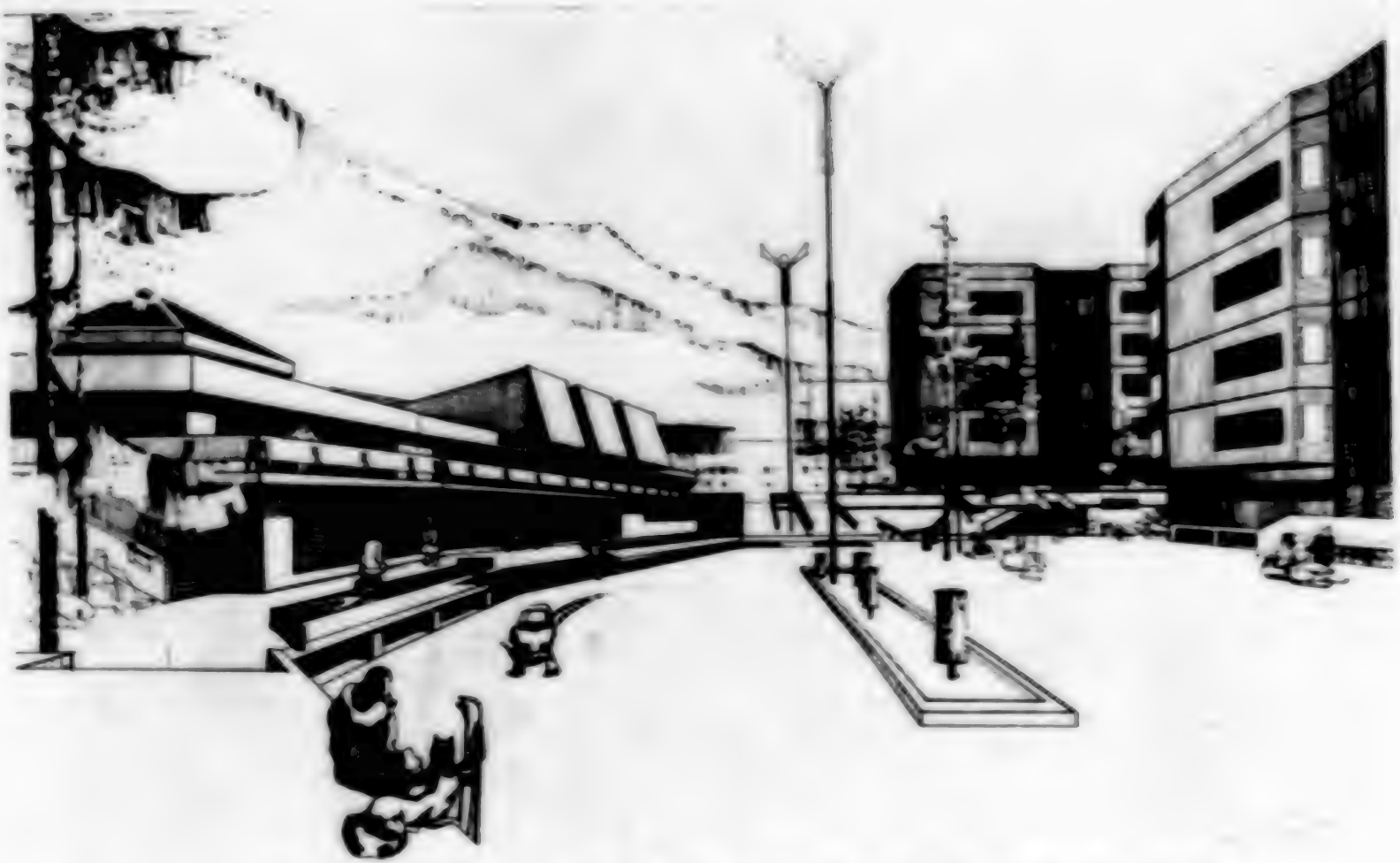
After the completion of construction in a particular sector, the dwelling houses of the permanent settlement are evacuated by the construction worker contingent living in them and the necessary rehabilitation repairs are made on the buildings, following which they are turned over for use as housing for the operational workers. This scheme for the organization of construction of settlements enables us to reduce the requirement for "temporaries" and it makes for a considerable reduction of the estimate cost of construction, achieved through curtailment of the costs of temporary settlements, the need for which virtually disappears.

Only in some cases, when there is a sharp difference between the estimated number of residents of the permanent settlement and the number of construction workers residing there temporarily, with the difference favoring the latter group, may the need arise to erect, by way of an exception, a number of stock buildings to house those construction workers who cannot be accommodated in the housing available in the permanent settlement.

The Nizhneudinsk plant of Mintransstroy, which joined the system of existing enterprises in 1978 and which manufactures containers for the components for assembly of wooden buildings, may in the near future become one of the principal suppliers of structures for the wooden buildings of the permanent BAM settlements.

Acting on the authorization of Gosgrazhdanstroy, the TsNIIEP for rural civil engineering construction, jointly with the general planner, Gipropromtransstroy [State Planning Institute for Transportation Construction], worked out architectural planning and technical designs for wooden permanent buildings constructed from volume units (containers) manufactured at the Nizhneudinsk IKZ [stock container plant] of Mintransstroy.

There was included in the plan for new technology the theme "Experimental construction of a permanent settlement on the BAM with the use of unit panel wooden structures, this settlement to be used in the initial period for the needs of the construction workers" (theme supervisor V. Butuzov). The purpose is test checking and preparation of suggestions for the erection of permanent settlements on the BAM, with plant-manufactured fully prefabricated wooden buildings to be used for construction of these; the settlements to be used in the initial period for the needs of the construction workers. The TsNIIEP of rural civil engineering construction, jointly with the TsNIIEP of engineering equipment, is working out a scheme for the planning and construction of this settlement.



p 15 Lopcha. Fragment of the construction--the social center and housing. Omskgrazhdanproyekt [Omsk Civil Engineering Construction Planning]. Architects Z. Andrusishin, V. Mal'tsev, T. Moroz and V. Proskurin

Severobaykal'sk. Construction of apartment houses of series 122.

Tynda. Nine-story apartment houses, series P-49-BAM

Niya. Four-story apartment houses, series 204.

Tayura. Four-story apartment house, series, 204.

Niya. Four-and two-story apartment houses, series 204

Berkatit, temporary settlement. Building of the Administration of the Construction and Installation Train

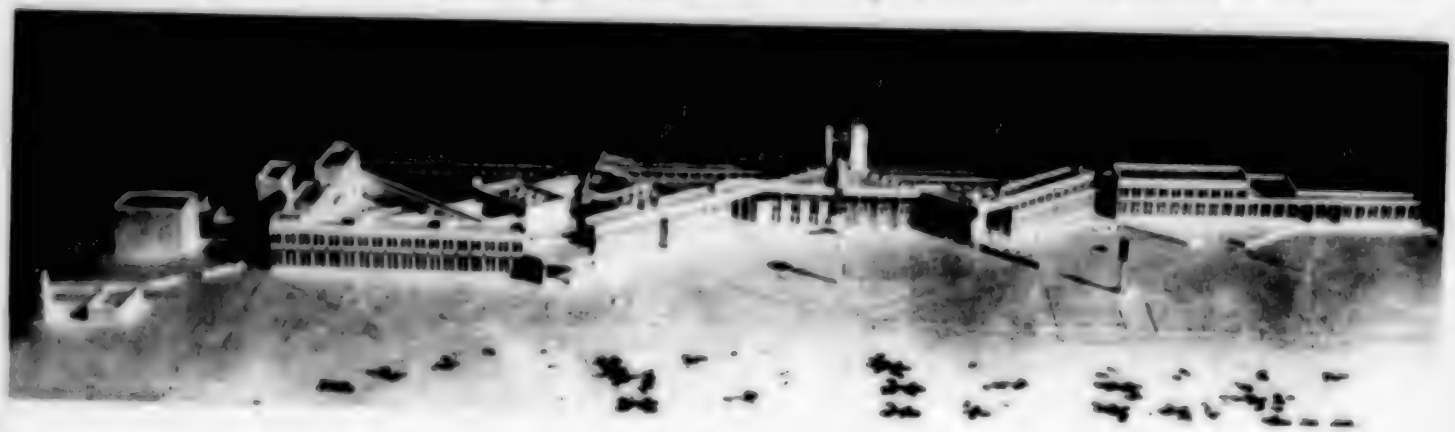
Berkatit, temporary settlement. Department store.

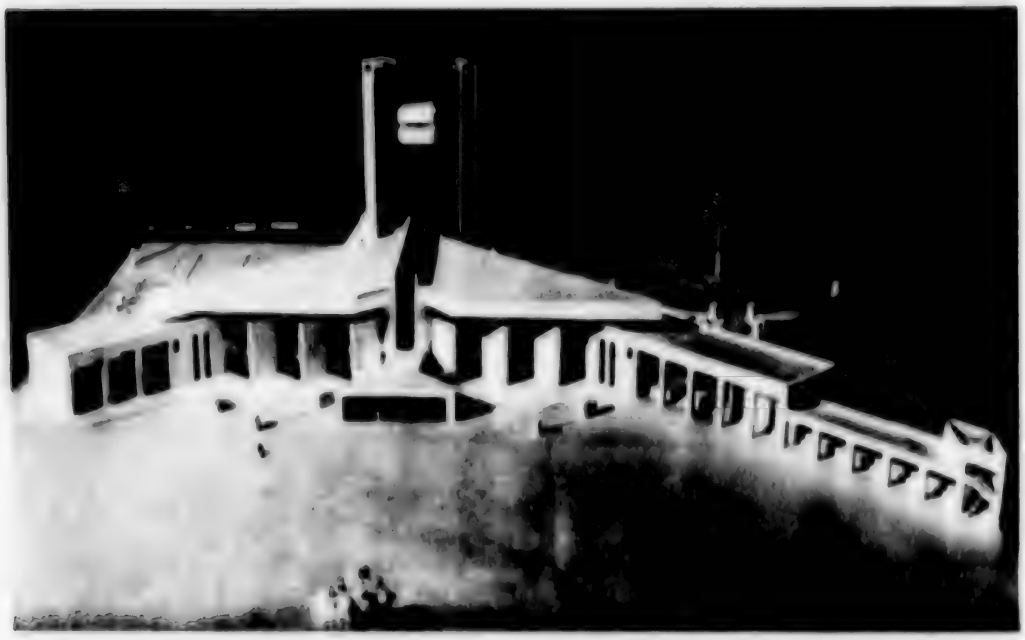
Berkatit, temporary settlement. Manufactured goods store.

Sulik, one-story apartment houses, series 111

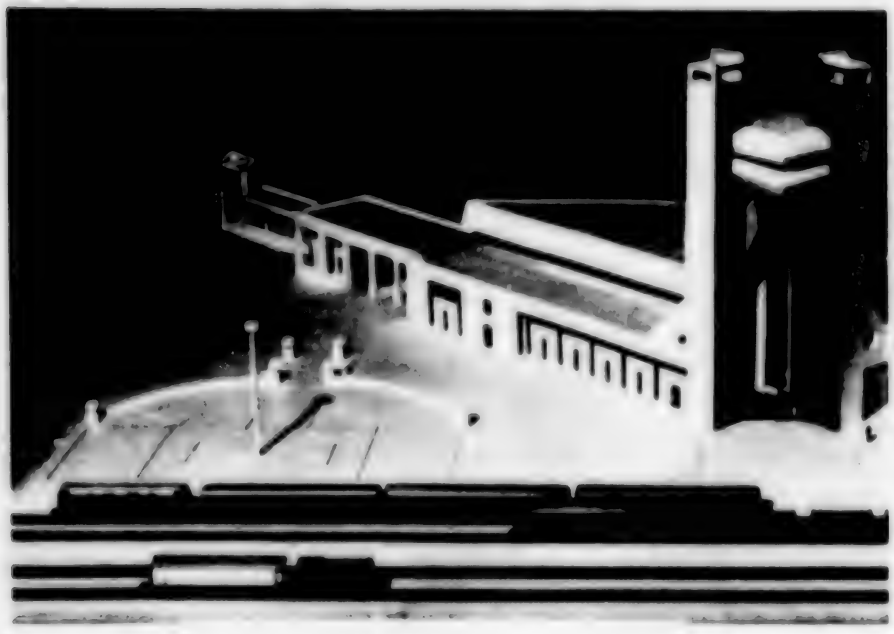
Sulik. Dining room

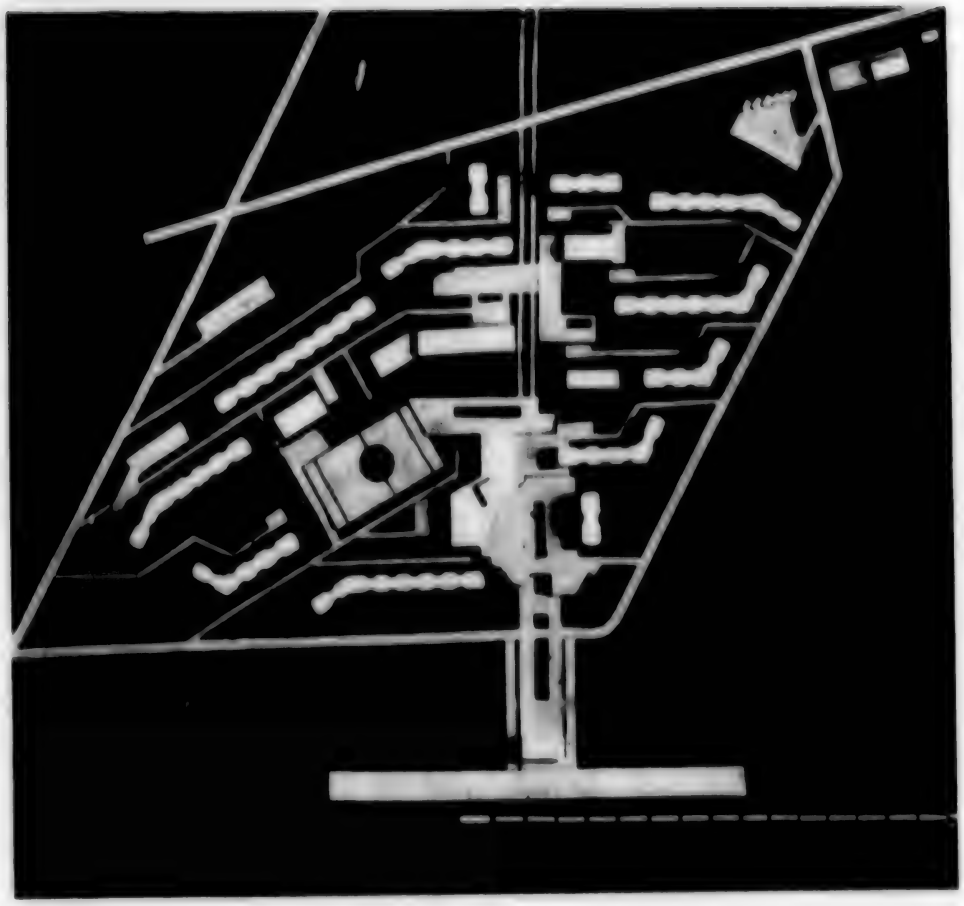
p 22 Tynda. Complex of the railroad station and the service and technical buildings. Mock-up and view of the complex from above. Architects V. Gudkov, Akozlov (Mosproyekt [Institute for the Planning of Housing and Civil Engineering Construction in the City of Moscow]-1, Workshop No 13), I. Sheptovitskaya and A. Nikolayeva (Mosgiprotrans [Moscow State Planning Institute for Transportation Construction USSR]



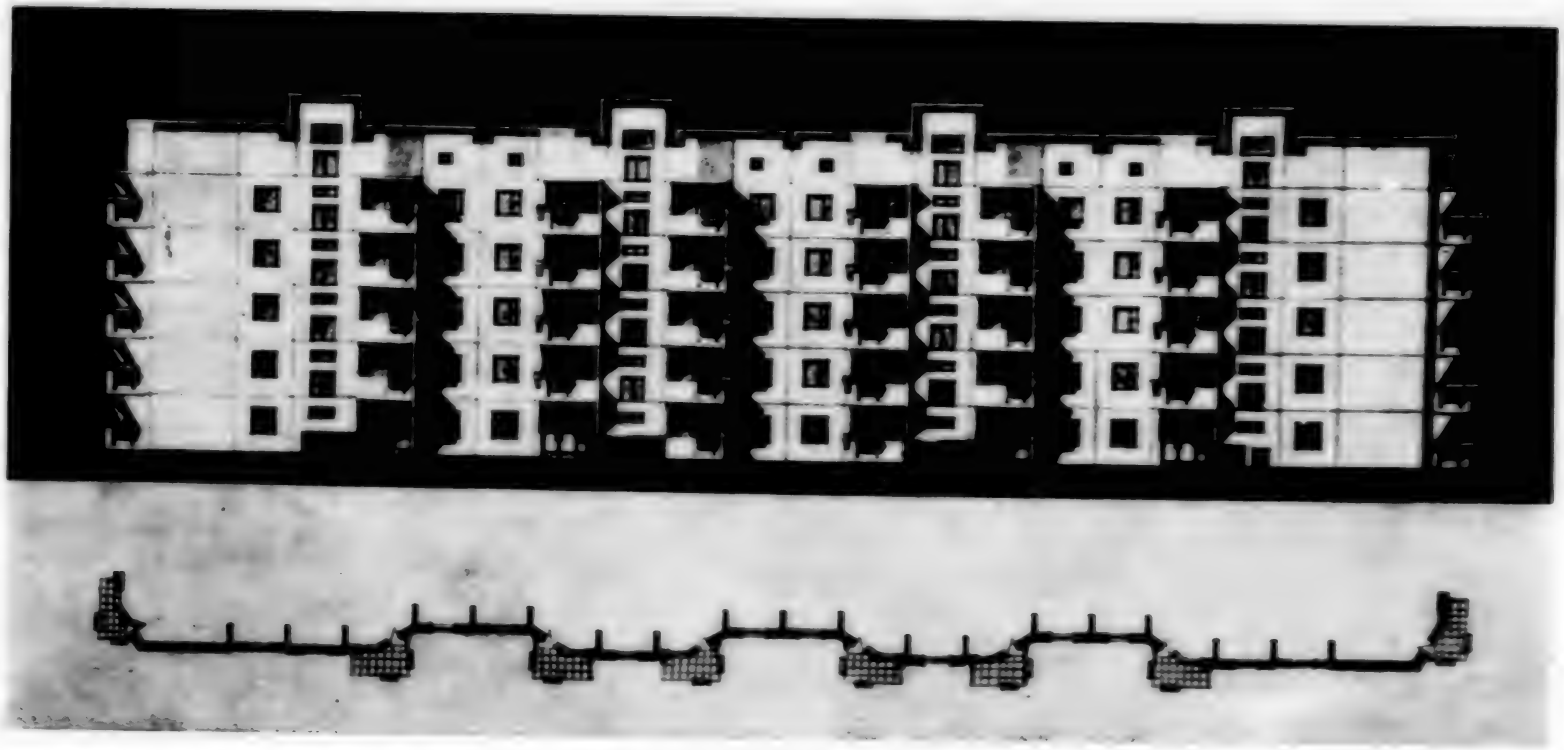


Railroad station. View from the railroad platform side and view from the station square side. Architects V. Gudkov and A. Kozlov



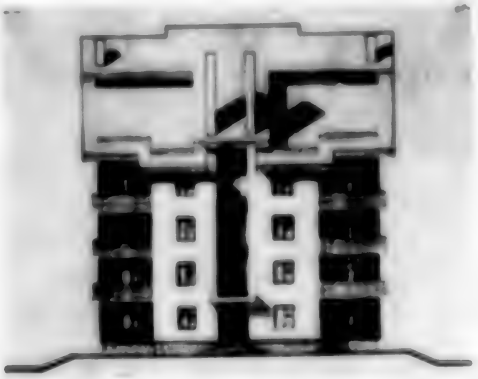


p 24 General plan of the settlement. Rostovgrazhdanproyekt [Rostov Civil Engineering Construction Planning]. Architects G. Ivanov, T. Lobaneva and E. Kogan

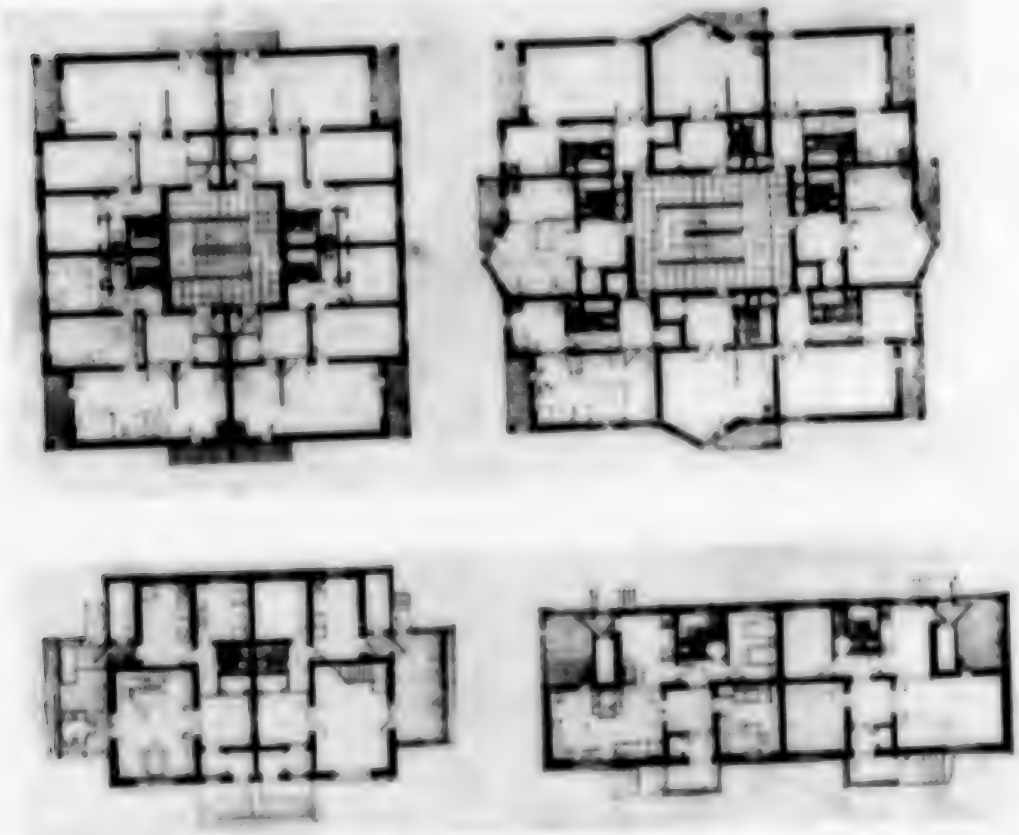


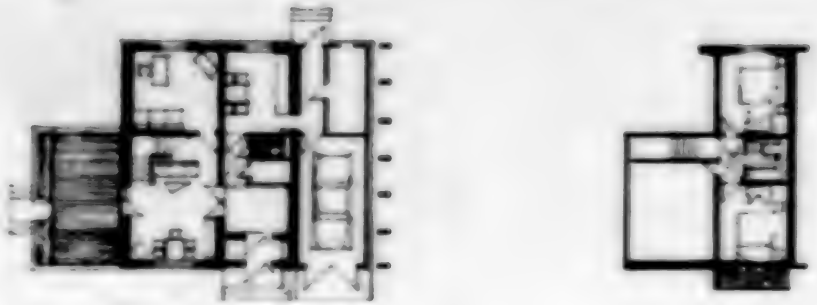
Five-story apartment house, series 122 (variant with summer quarters). Planning proposal. SKB [special design office] of the Glavstroyprom [Main Administration of the Construction Industry]. Architects V. Butuzov (chief of the authors' collective), I. Papush, V. Novikov and O. Frolova.

Two story sectioned apartment house, series 204, Front. SibZNIIEP [Siberian Zonal Scientific Research Institute of Experimental Planning]. Architects M. Pechorin, K. Ccherepkova, A. Rozhdestvenskaya, I. Shvetsova and Yu. Shershnev.
Four-story apartment house, series 204. Front. SibZNIIEP. Architects M. Pechorin, K. Cherepkova, A. Rozhdestvenskaya, I. Shvetsova and Yu. Shershnev.

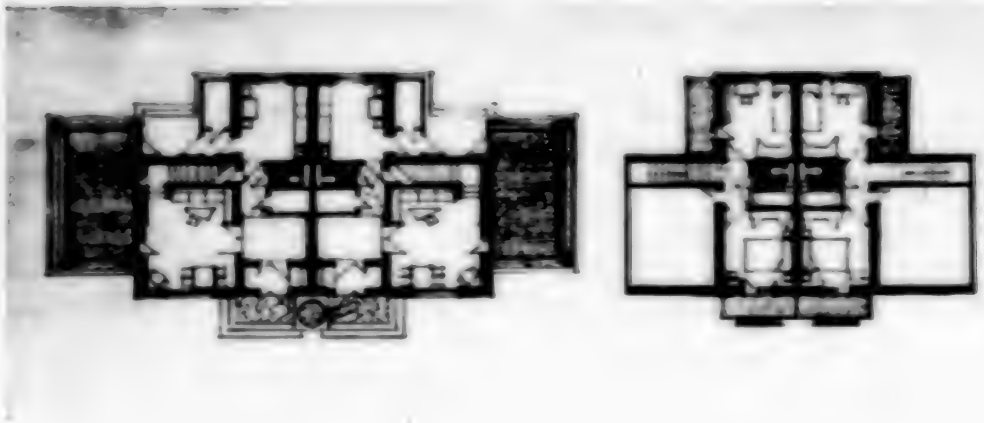


Wooden block apartment houses. Planning proposal for experimental construction. Facade and plans. SKB of Glavstroyprom. Architects V. Butuzov (chief of the authors' collective), I. Papush, V. Novikov, O. Frolova and V. Kolpikov.





Dwelling houses with apartments on two levels, designed for construction from series 25 items. Planning proposal for farmstead construction. Facade and plans. Architects V. Butuzov (chief of the authors' collective), A. Yakushev and I. Papush.



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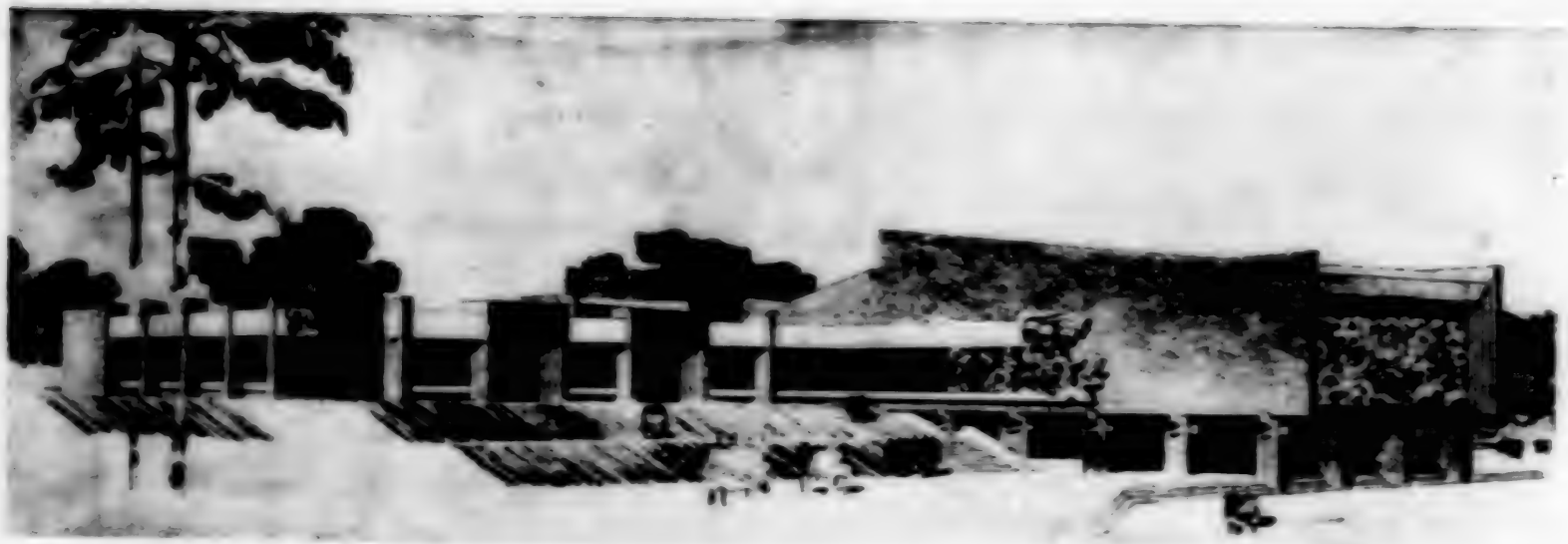
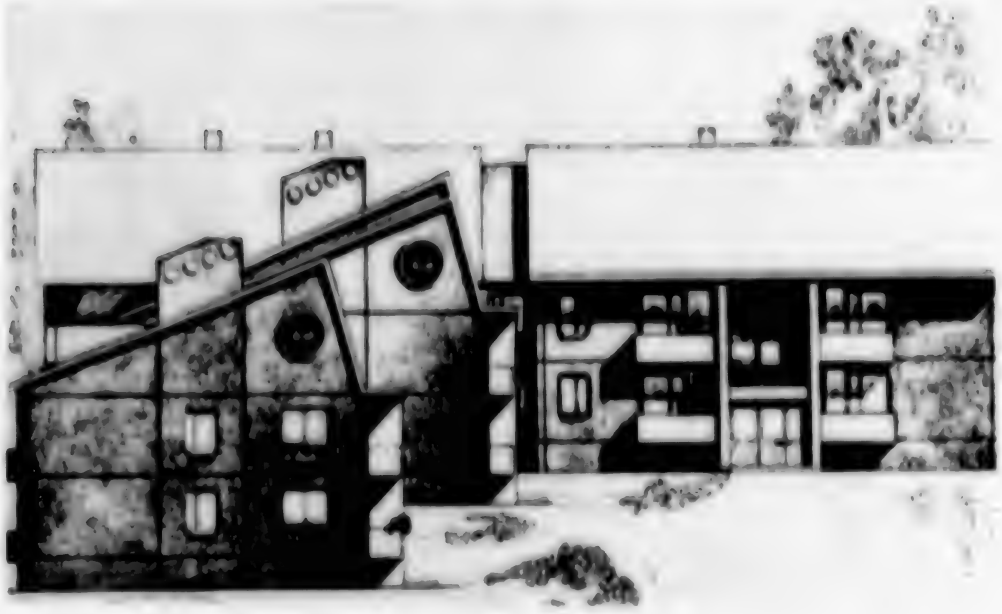
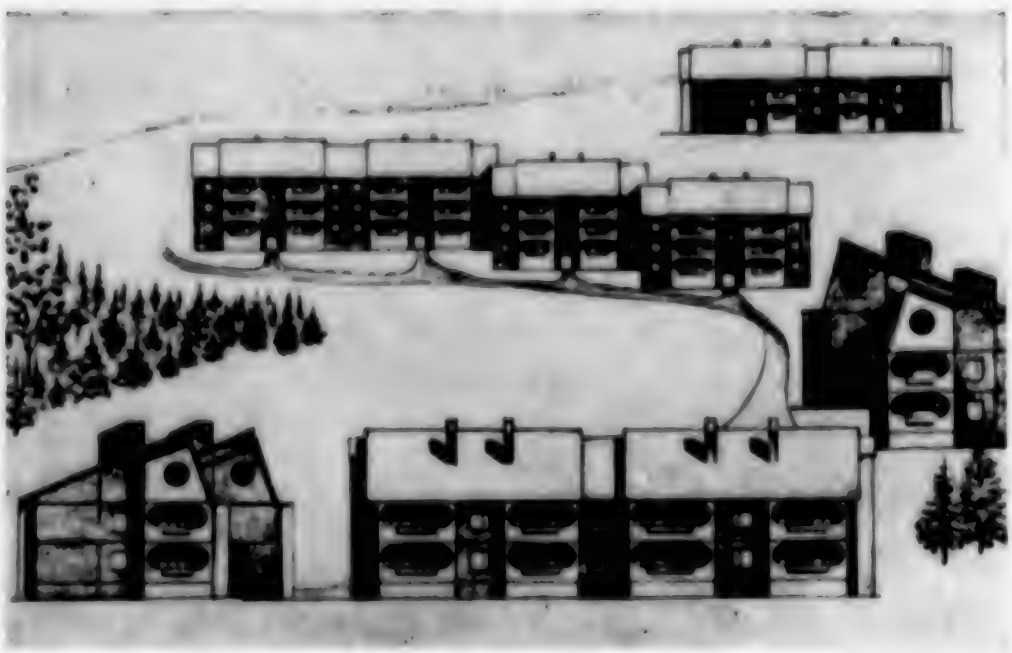
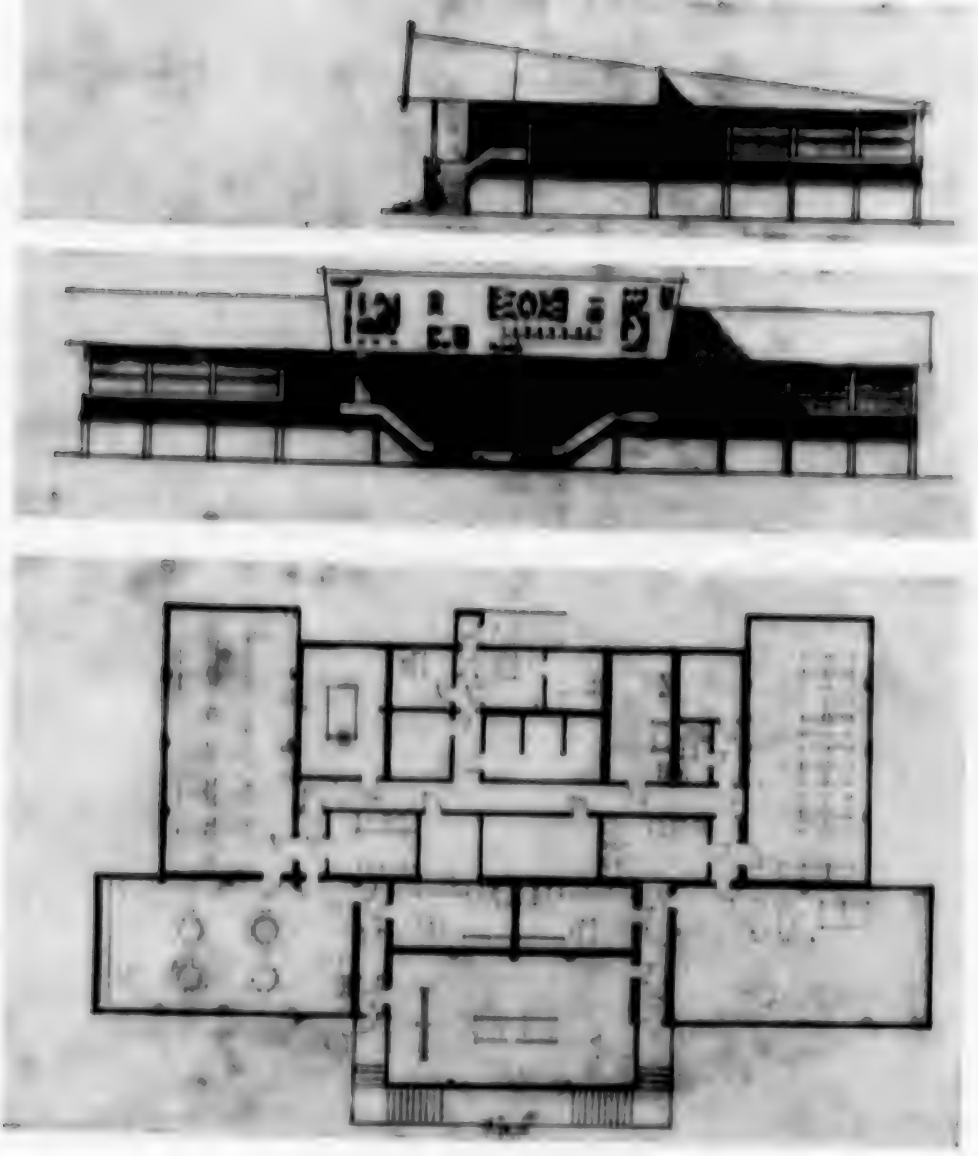


Keringa. Trade and social center. Facade. North Caucasus branch of Giprotorg [State All-Union Institute of Trade Establishments and Public Dining Facilities].





Two-and three-story modular large-paneled homes, series 135. Proposed design. Design Bureau of Reinforced Concrete, RSFSR Gosstroy. Architects G. Grosman, I. Dagdanova, V. Krasil'nikova and A. Yakushev.



Container-panel kindergarten-nursery. Planning proposal for experimental construction. Facades and plan. TsNIIEP of Rural Civil Engineering Construction. Architects B. Makhan'ko, V. Muzychin, R. Sakharova.

7962
CSO: 1820

BRIEFS

WINTER PROTECTION OF TRACKS--The scientists of the Institute of the Mechanics of Polymeric Systems of the BSSR [Belorussian SSR] Academy of Sciences have developed an electrically conductive lubrication for protection of the electric contacts of the switches on the railroad tracks. Investigation showed that it offers dependable protection of the contacts from frost and ice in the winter period. The innovation was first introduced at the stations of the Gomel' section of the Belorussian Main Line. The economic effect from the introduction of this item amounted to 40,000 rubles. The invention of the Gomel' scientists has now been incorporated in the equipment on many of the country's railroads.--F. Zaytsev. [Text] [Minsk SOVETSKAYA BELORUSSIYA in Russian 10 Jan 80 p 2]

NEW SERVICE IN OPERATION--Trains operating on the electric locomotive line have left from station Kamen'na Obi (Altayskiy Kray) headed for Novosibirsk and Barnaul. Work has been completed on the electrification of a sector nearly 160 kilometers in length. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 80 p 3]

ELECTRIFICATION OF LINE--Work has begun on electrification of the Danilov-Vologda two-track railroad line. its length will be 140 kilometers. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 13, Mar 80 p 3]

UNLOADING DELAYS--A car of briquettes arrived at station Balin on the Southwest Railroad. The point of dispatch was Pantayevka on the Odessa Railroad. The disabled veterans and veterans of the Great Patriotic War were pleased: the briquettes were for them for a special purpose. But a day passed, another day and a whole week. And the fuel still could not be unloaded: the accompanying documents did not coincide with the car number. Who was responsible for the mix-up? The Balin station chief sent off a telegram to Kiev and Odessa but no reply was received for a long time.--P. Mel'nik, Smotrich Settlement, Dunayevetskiy Rayon, Khmel'nitskaya Oblast. [Text] [Kiev PRAVDA UKRAINY in Russian 12 Mar 80 p 2]

WINTER TRACK EQUIPMENT--In the regions where winter and frosts hold sway for many months there is appreciation for the new track machines which the

Kambarka machine-building plant in Udmurtiya put into series production. The machine in question is a rotary snow sweeper with a revolving blade capable of rapidly clearing the snow drifts from the tracks, in the process throwing the snow up to 9 meters from the rails. The Kambarka plant produces diesel locomotives and various track machines designed for the narrow-gage lines which lead to the woodworking shops, the quarries and the mines. For the Siberian and Far Eastern inhabitants they have now also begun production of wide-gage locomotives. These 800-H.P. locomotives provide dependable operation in low temperatures.--(TASS correspondent), Kambarka, Udmurt ASSR. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Aug 79 p 2]

ROAD-BUILDING REPAIR EQUIPMENT--Put into operation was the first section of a plant for repair of road-building machines for the Baykal-Amur Main Line [BAM]. The construction workers of Angarstroy [Angarsk Construction Administration] accomplished all the construction starts considerably ahead of schedule. The enterprise will repair excavators, bulldozers, graders, hoisting cranes and other equipment. In Tayshet they are also constructing a large plant for reinforced concrete products.--Tayshet. [Text] [Moscow TRUD in Russian 4 Jan 80 p 1]

BAM EQUIPMENT REPAIR--Reconditioning of the first consignment of road equipment has begun in the shops for repair of the construction equipment for the BAM. The first section of the enterprise went into operation ahead of schedule. The plant will begin reconditioning the various types of machines used in the construction of the route.--(TASS) Komsomol'sk-on-Amur. [Text] [Moscow IZVESTIYA in Russian 29 Dec 79 p 1]

ELECTRIC LOCOMOTIVE FOR BAM--The Novocherkassk All-Union Scientific Research, Planning and Design, and Technological Institute of Electric Locomotive Building (VelNII) is continuing the tests for the VL 84 electric locomotive, which was developed for the Baykal-Amur Main Line. This locomotive differs from its partners in a number of characteristics. First of all, the designers had to keep in mind the climatic conditions--on the BAM there are frequent occurrences of frost reaching to 60 degrees. Hence, the BL 84 materials and assemblies have to meet especially stringent requirements. The new electric locomotive embodies about 200 new types of designer materials and products which are capable of dependable operation in low temperatures. An automatic control system has been set up for the movement and braking process. This insures movement of the vehicle at precisely the assigned speed. The VL 84 has a spacious cabin with a conditioner and a refrigerator for food products. The vibration-proof seats provide additional confort. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Jan 80 p 4]

CSO: 1829

MINISTER OF RSFSR RIVER FLEET ON RIVER TRANSPORT DEVELOPMENTS

Moscow RECHNOY TRANSPORT in Russian No 12, 1979 pp 1-2

[Article by L. V. Bagrov, RSFSR Minister of the River Fleet: "For a New Uplift in River Transport"]

[Text] The river fleet of the RSFSR is an important link in the transport system of our nation. It carries out the transport of various cargoes for the needs of industry and agriculture in the central regions of the European part of our Motherland and takes an active part in the development of the productive forces of Siberia, the Far East and the Far North, particularly in facilitating the delivery of cargo to enterprises and construction projects of the oil, gas and timber industries, nonferrous metallurgy and geology. Our river fleet workers do a great deal towards satisfying the requirements of our population for the hauling of passengers. The workers of our river trunklines also make a specific contribution towards expansion of our internal economic ties. It can be said that the services of our river transport are utilized to one or another degree by almost all branches of our national economy.

The Communist Party and the Soviet Government devote constant attention to questions connected with the further development of our domestic river fleet and manifest a tremendous amount of concern over our nation's river fleet workers. This year, the CPSU Central Committee and the USSR Council of Ministers adopted a decree entitled "On Measures for the Development of River Transport Over the Years 1981-1985." In this programmed and exceptionally important document for our river fleet workers it was noted that, in the 10th Five-Year Plan, the river transport of common usage to all union republics received further development. Increased was the intensity of usage of the transport fleet, the capacity of ports and of ship repair enterprises, and of internal navigation routes. Being accomplished is the priority development of our river transport in the regions of Siberia and the Far East, which facilitates the speeded-up development of the productive forces there.

Together with this, the decree emphasizes the fact that existing possibilities for increasing the hauling of cargo over our internal water routes are not being utilized sufficiently. Measures aimed at improving mutual

ties between river and railroad transport, at switching to the river fleet during the navigation period a portion of the freight being hauled on railroads which parallel river routes are being carried out slowly. Many ministries and governmental departments still make insufficient use of river transport for delivery of mass cargo to enterprises and transshipment bases located close to river routes and are not taking the necessary measures for the effective utilization of river transport for haulage, for creating at enterprises reserves of raw material and fuel resources for the winter period, are being lax in the expansion of pier and warehouse facilities, and often concentrate upon the hauling of freight by railroad transport without sufficient foundation for it. There has been insufficient expansion of the river fleet in a number of the nation's regions, particularly in the Ob'-Irtish and Lena river basins; this fact has resulted in a situation where the needs of the national economy for hauling freight in those basins are not being fully satisfied.

The decree mentioned above places important and responsible tasks before our river fleet workers, defines how those tasks can be resolved and indicates the path we are to take for a further uplift in our river transport and for expansion of its material-technical base. An increase in the effectiveness and quality of work of river transport is required first of all through an improvement in operational activity, curtailment of runs without cargo and of demurrage, utilization of highly-productive loading mechanisms and improved technology in loading-unloading operations, plus wide-scale dissemination of fleet, port and transport hub leading work methods, to the end that the productivity of both self-propelled and towed cargo-carrying vessels in 1985 is increased by 6 percent as compared with 1980. Haulage labor productivity should increase by 15 percent. Freight turnover in 1985 has been set at 300 billion ton-km. By the end of the 11th Five-Year Plan, the hauling of cargo by river transport to regions of Siberia and the Far East must be raised to 160 million tons, including 70 million tons for Western Siberia; this is to be accomplished by providing first and foremost the material, financial and labor resources necessary for the fulfillment of these tasks.

During the 11th Five-Year Plan, our intention is to shift 24 to 33 million tons of freight from railroad to river transport, including a considerable volume of oil, coal, sand, ore, etc. Special attention is to be devoted to the hauling of sand-gravel mixtures, crushed stone, gravel and other construction materials. Together with the USSR Ministry of the Construction Materials Industry, our ministry has been entrusted to work out by the first half of 1981 for confirmation by USSR Gosplan and by USSR Gossnab measures to be carried out between 1981 and 1985 for the transfer of those particular cargoes from railroad to river transport. Inasmuch as we must get moving on this immediately, our plans for 1980 should already include work involving design, estimates, long-range research, and the compiling of technical-economic justification for individual freight traffic flows.

In 1985, the volume of apatite concentrates to be hauled by river transport is to be raised to 1.2 million tons, with transshipment through the port

of Medvezh'yegorsk; the volume of potash fertilizer is to be increased to 1.3 million tons. In the Mariyskaya, Bashkirskaya, and Tatarskaya autonomous republics and the Ivanovskaya, Permskaya, Kirovskaya, Kostromskaya and Vologodskaya oblasts the construction and placement into operation of riverside warehouses with mechanized piers for the unloading and storage of mineral fertilizers with an over-all traffic capacity of up to 600,000 tons a year.

River and ocean-going vessels will be hauling to Riga gravel from Leningradskaya Oblast plus construction sand from Kaliningradskaya Oblast on the order of 1 million tons per year.

Facing RSFSR river fleet workers in 1985 is the task of raising the hauling of vegetable and melon crops to 400,000 tons. This is a very responsible task and it must be resolved not in the way it was done, for example, in 1979, when a tremendous number of river fleet vessels was used, part of which utilization was economically inexpedient. It is not difficult to imagine what amount of transport capability is lost by the river fleet when it allocates, for example, a 3,000-ton diesel vessel to haul 600 tons of tomatoes and sends that vessel a distance of over 3,000 km. To pay such a price in resolving problems which are so complex for us is absolutely intolerable. The way out of this situation, in the first place, would be the construction of vegetable carrier-vessels.

Among our major questions is that of increasing the volume of grain hauled to 7 million tons a year. In order to cope successfully with this assignment, we need to devote particular attention to speeding up the handling of vessels. The administrators of our ministry, institutes and steamship lines should persistently strive to see that all of the measures on this question which have been included in the decree are fulfilled precisely and on schedule.

As is known, among the decisions of the 25th Party Congress, one of the most important tasks placed before our river fleet workers is that of increasing the navigation period of work of our fleet. For it means that every day which we have wrested away from nature represents 500,000-600,000 tons of additional cargo. By 1985, we intend by this means alone to increase the volume of cargo hauled by 15 million tons.

In dealing with this problem of extending the navigation period, our river fleet workers are achieving definite success. On the Volga River in 1978 the river fleet and ports worked all through the month of November; on the lower reaches of the river, they worked through the first half of December. In 1979, the first vessels leaving Astrakhan' for Volgograd were able to do so in March. On the Irtysh River, with the aid of the sole icebreaker provided, the spring navigation season was extended by 6 days. From the standpoint of their effect on our national economy, measures are being worked out and put into effect for extending the navigational period for the work of our cargo fleet in all of our most important river basins.

Experience has shown that operation of the river fleet in the late autumn and early spring requires creation of new types of transport vessels for work in ice, of the means for clearing channels of broken ice, requires augmentation of our icebreaking capabilities plus more equipment for port sluices and waterways, of structures for raising and lowering vessels, all of which facilitate their operation under negative temperatures.

On the agenda also is an increase in the volume of food and industrial products and of other cargo in containers and packets to be hauled by river transport in 1985 by 1.3 over 1980; also planned is a significant increase in the intensity of loading-unloading work (by 16 percent).

As we can see, the goals which are to be attained by the river fleet workers of the Russian Federation in the near future are very high. By what methods, through what means can we realize the requirements and tasks which have been placed before the workers on our rivers?

Here once more we would like to take note of the tremendous concern manifested on behalf of our river fleet workers by our part and government. Suffice it to say that the volume of capital investment funds in 1981-1985 for "River Transport" for construction of installations of productive significance will be 3.35 billion rubles. Of that amount, 380 million rubles is being allocated for construction-installation work. This is much more than the amount that was designated for the same purpose during the 10th Five-Year Plan. 297 million rubles will go into the construction of housing; significant funds have been allocated for the further expansion of public health services. In connection with this, a great deal of effort will have to be concentrated on the creation of a proper construction base, on promoting the growth of capacity of steamship line construction organizations and of ports, shipyards and water route administrations, particularly of the Moscow Administration of Underwater Technical and Construction Work. Now is the time to begin work locally with contract organizations, to organize the joint review and coordination at production sites of all work volumes for the five-year plan.

Intensive attention deserves to be paid to questions connected with expansion of the material-technical bases of ports and of piers belonging to other ministries and governmental departments. Everyone knows how much the national economy has suffered from the lack of sufficient mechanisms at our clientele's own piers, where the river fleet layover is twice, three times and even four times greater than that of our own river fleet piers. There our vessels sustain a tremendous loss of carrying capacity. In the new five-year plan, the number of piers owned by our clientele will be increased sharply. It is necessary to strive ahead of time to see to the inclusion of plans made by ministries and governmental departments in 1980 for the designing of new piers, construction of which is to begin in 1981 and 1982.

Successful realization of everything which we have outlined will depend to a great degree on the capability of our design organizations as to turning

out design technical documentation on schedule. There are no other organizations in our nation which can handle this work of design documentation for piers. This means that things must be so handled that not even one governmental department entrusted with the construction of piers has any excuse whatsoever (this includes our own organizations also) for failing to provide technical documentation on schedule. In connection with this, a great deal of responsibility is being placed upon our own design workers. It is to be hoped that they will cope with honor with the tasks which have been entrusted to them.

This new stage in the development of our river transport calls for further construction, expansion and reconstruction of ship repair and shipbuilding enterprises, and for the construction of cargo and passenger vessels. As compared with the 10th Five-Year Plan, transport fleet construction is to increase by 22 percent; the number of dry-cargo vessels, tankers, tugs, etc. is also to be increased. Assignments have been set for the transport development of minor rivers in the oil and gas deposit areas of Western Siberia. These assignments include establishment on those minor rivers of regular steamship lines, of piers and ports equipped with up to date technical means, plus the setting up of storage facilities at petroleum transshipment bases, at petroleum processing plants, and at riverside thermal electric power stations. Large-scale measures are being planned for expanding and increasing the traffic capacity of the Volga-Baltic River Route imeni V. I. Lenin, the sluices of the Volga Cascade, and other systems.

It seems to me that it is high time to raise the question of increasing the traffic capacity of our river fleet under the bridges of Leningrad. This is a very complex problem. That is why, from the very beginning, we must strive for the working out of capital measures involving utilization of the latest technical means and a search for new design solutions. It is time, evidently, to start thinking also about creation of a ship's dock which can be submerged, as well as about improving the organization of the steamship line on the Neva River. All this, of course, should be done now; we should not, as they say, procrastinate. An important condition in bringing these plans to reality remains, as before, an improvement in the utilization of basic funds, the bringing forth and use of all reserves, the further improvement of economic mechanisms.

With the aim of speeding up the delivery of goods to consumers and of lowering costs, we must utilize all of our capabilities now and in the future for loading cargo directly from ships into railroad cars and from railroad cars onto ships at our ports; we must apply more actively the experience, this supported by the CPSU Central Committee, of the worker collectives at the Leningrad Transport Hub in tying together the work of various types of transport.

Planned for the new five-year period are measures aimed at increasing the number and improving the training of specialists and of qualified workers

for river transport. The Moscow Institute of Water Transport Engineers is to be organized in 1980. This is an exceptionally important and timely decision.

Broad horizons are being opened to our RSFSR river workers in connection with the publication of the decree of the CPSU committee and of the USSR Council of Ministers. It places a great responsibility upon our river fleet workers. Unfortunately, fulfillment of the 1979 plan has been unsatisfactory. Suffice it to say that results of the past 9 months show that our river fleet workers did not fulfill either the plan for freight turnover or for utilization of the river fleet. There was a qualitative decline in the work of our industrial enterprises in September. Our shipbuilding assignments have not been fulfilled. All these facts attest to a weakening of organizational work at plan fulfillment, to an insufficient level of administrative activity, to an inability at times to make maximum use of reserves.

There are significant shortcomings also in the field of capital construction. The construction-installation plan for "River Transport" over the past 9 months has been fulfilled by only 93.3 percent. Extremely unsatisfactory in their work were the Amur, Bel'skiy, "Volga Tanker," United Volga, Yenisey, Kamsk, Moscow, Pechora and certain other steamship lines. All of this may bring down upon us serious consequences in the near future. The fact is that the decree on the development of river transport specifies construction-installation work on the scale of 380 million rubles. This is 1.5 times larger than the corresponding figure for river transport construction-installation work in the 10th Five-Year Plan, without counting the additional 138 million rubles in capital investment funds transmitted to us by other ministries and governmental departments for the ports of Urengoy, Nadym, Sergino, Nizhnevartovsk and others. Thus, a colossal increase in shore base capital investment funds is anticipated. At the very same time, we should constantly keep in view the fact that it is only through the unconditional fulfillment of the plan for capital construction, of all of the measures designated, that it will be possible for us to expand the material base of river transport in conformity with the decree.

The 10th Five-Year Plan placed large and important tasks before the river fleet workers of the RSFSR. The expanded program which has its source in the decree of the CPSU Central Committee and the USSR Council of Ministers is intended to continue on into the 11th Five-Year Plan. Intensive, selfless labor today will be the guarantee of our success tomorrow, the true guarantee of the further development of the river transport of the Russian Federation.

9643
CSO: 1829

RIVER FLEET SHIP REPAIR: 1979 ACCOMPLISHMENTS

Moscow RECHNOY TRANSPORT in Russian No 12, 1979 pp 26-27

[Article by Engineer Yu. Gafurov, chief of a department under the Main Administration for Shipping and Ship Repair Enterprises, Ministry of the River Fleet RSFSR: "Responsible Ship Repair Tasks"]

[Text] The organizational-technical level of ship repair production exercises an ever-increasing influence over the work indices of the river fleet. Expenditures for maintenance, medium and capital repairs of vessels exceed 20 percent of the over-all operating expenditures for the fleet. In connection with the intensive supplementation of the river fleet, the volume of ship repair work over the past decade has increased by two-thirds, despite the fact that fleet capital repairs were not carried out in full measure; at some steamship lines, they were not carried out at all. There is a significant increase in the volume of ship repair work at the Belomorsk-Onega, Northwestern, Yenisey, Irtysh, Sukhonsk and Moscow steamship lines; the increase is particularly sharp at the "Volga Tanker" Line. Thus, at the Ship Repair Yard imeni 30th Anniversary of the October Revolution, the expenditure of labor for winter repair work over the past 5 years has more than doubled; the annual growth rate in the volume of repair work is 23 percent, while that for medium repairs is 36 percent. That repair yard, in cooperation with the Ship Building and Repair Yard imeni Third International, has embarked upon the capital repair of the "Volgoneft'" type tankers.

Volumes of fleet repair work are increasing faster than the capacities of ship repair enterprises. Under these conditions, what is of particular great significance is the improvement of ship repair organization and technology, the introduction of leading methods and new forms of production organization.

In connection with the onset of the time set for carrying out capital repair work on a large group of vessels now in series production and the increase in the number of diesel engine vessels being utilized in combined river-sea hauling, fleet ship repair work is becoming a year-round affair to an even greater degree.

During the 1978-1979 winter period, worker collectives of steamship lines and ship repair yards did a great deal of work aimed at improving the technical condition of the fleet.

In expanding the socialist competition initiated by workers of the Ship Building and Repair Yard imeni Lenin, workers of ship repair enterprises and crews of vessels belonging to the Moscow, Northwestern, United Volga, Belomorsk-Onega, Western, Kuban', West Siberian and Lena lines did a timely and high-quality job in preparing their vessels for the 1979 navigation season and placed them into operation within a short period of time. The Bryatsk Steamship Line managed to get its entire fleet to work over the course of 4 days. Prior to 24 April, all tankers under repair at the Ship Yard imeni 30th Anniversary of the October Revolution were released and sent on their way.

During the winter period, medium repair work was done on 1,500 self-propelled vessels and on over 1,000 barges and components; of these, 600 vessels which had had prohibitions and limitations placed on them after the navigation period by the River Register were restored to operational status. As a whole for the RSFSR Ministry of the River Fleet, the number of self-propelled vessels banned from operation was decreased by 1.3 percent, that of barges and components by 2.9 percent. Over 2,000 vessels were put to work making medium repairs and eliminating damage done to slips, docks and shore. During the ship repair period, 250 low-speed engines were replaced while over 2,000 engines went through major overhaul in specialized shops. However, the Neva, the imeni Uritskiy, the Tol'yatti, and the Omsk ship building and repair yards did not cope with the assignments set before them.

Side by side with this large repair program, modernization work was done on installation of shipboard equipment for producing drinking water and on the re-equipment of vessels in keeping with the requirements of international conventions for navigation safety and for preventing the pollution of water tanks.

Under conditions in which there is an increase in the volume of repair work and in which there is a shortage at a number of enterprises of workers with ship repair specialties, the introduction of advanced labor organization methods is of tremendous significance. The brigade method, this involving 2,500 workers, was used in the repair of over 700 vessels. One of the progressive forms for the technical servicing of the fleet is being introduced at the United Volga Steamship Line--the method of carrying out all work in accordance with shipyard plans for the technical servicing of vessels before they are put away for the winter, i.e., while they are still "under steam." 120 vessels were prepared through use of this method at nine yards during the 1978-1979 winter period. Steamship lines had 95 commissions in operation on the acceptance and evaluation of the quality of repair work which inspected over 1,200 vessels. 350 specialists took part in the work of these commissions.

The experience of our leading enterprises--the Moscow, the Astrakhan' imeni Lenin, and other ship yards--in introducing a complex system for the management of production quality on the basis of standards set by those enterprises has demonstrated that, at those yards, there has been an increase in interest on the part of the workers as to the results and the quality of their work.

There has been an improvement in working conditions, an increase in production efficiency and of the quality of fleet repair work. On the basis of accumulated work experience, the Main Administration for Shipping and Ship Repair Enterprises has approved model standards for enterprises which regulate the procedure for preparing and turning vessels over for operation. These standards, with allowance for local conditions, are to be placed into effect at every ship repair yard.

The 1978-1979 winter ship repair period did not occur without serious shortcomings and omissions. Enterprises of the Irtysh, Yenisey and Pechora lines did not see to the placing of their entire transport fleet into operation on schedule. The Irtysh and United Volga steamship lines are tolerating digressions from the system of planned-preventive maintenance and are not fulfilling their plans for the docking of vessels. At the Irtysh Steamship Line, assignments as to the zero stage of ship repair are only 70 percent realized, while fulfillment of the plan for preparing and providing vessels with apparatus and equipment during the course of medium repair is somewhere between the 30 and 65 percent level.

A peculiarity of ship repair maintenance work is the fact that a portion of the fleet still spends a significant amount of time at work, with certain vessels continuing their work on into the ice navigation period.

The volume of medium repair labor intensive work has increased by 4.5 percent. Scheduled to undergo this type of medium repair work are 1,600 self-propelled vessels and over 1,000 components and barges; the over-all cargo capacity of all of these exceeds 1 million tons.

In 1980, following capital repair work on them, 159 transport vessels are to be placed into operation; this is 22 percent more than in 1979. Fleet capital repair volume, as expressed in monetary terms, is to be increased by 61 percent.

Following this period of winter ship repairs, the number of vessels with good and satisfactory evaluations is to increase and is to include up to 98 percent of the self-propelled and up to 94 percent of the towed vessels belonging to steamship lines. 350 main low-speed engines will have to be replaced. Facing repairs in specialized shops are over 2,900 engines which will be needed for winter ship repair and which will be used in loading machinery.

With the aim of lessening the work burden of existing diesel engine repair shops and of decreasing transport expenditures, the Balakovo Ship Repair

Plant of the United Volga Steamship Line is to take on additional work involving the capital repair of 6 chsp 18/22 engines, while the Samus' Ship Building and Repair Yard of the West Siberian Steamship Line is to do more capital repair work on 6 ch 12/14 engines. Energetic measures need to be adopted towards the organization of this production. For example, by the way, capital repair work on the 6 nfd 26 lz engines has yet to begin at the "In Memory of Dzerzhinskiy" Ship Repair Plant of the Kamsk Steamship Line.

Without at least a 1.5 increase in the volume of centralized repair of ship's mechanisms it will be impossible to meet the increasing capital repair needs of the fleet on schedule. It is incumbent upon the steamship lines to organize specialized sectors at their yards for the repair of compressors, pumps, hydraulic rudder machinery and other marine equipment, this in order to meet the requirements of their enterprises through cooperative deliveries between river basins.

Raising the level of fleet technical exploitation enabled us to get about 2,700 vessels ready to be put away for the winter without any repair work following an autumnal shipyard technical inspection.

More than 360 units of technological equipment have been placed into operation at ship repair enterprises for future ship repair work. However, problems involving the mechanization of labor consuming ship repair work through utilization of equipment on hand and through introduction of advanced production technology require unrelenting attention. There should be an increase in the responsibility of plant directors for delivery on schedule to ship repair enterprises of ship's mechanisms, assemblies and components in accordance with a plan for inter-plant deliveries. In accordance with this plan, to meet ship repair needs, there are to be manufactured over 2,000 propellers, 5,000 cylinder bushings and 7,000 engine pistons, 500 propeller shafts, and 300 rotating adapters.

For purposes of preventive maintenance and for eliminating damage to the underside of ship's hulls, as well as for the repair of propeller-rudder complexes, about 2,000 vessels will have to be lifted out of the water and docked. In connection with this, there should be organized the effective utilization during the winter period of ship-hoisting equipment at ship repair enterprises in Krasnoyarsk, Leningrad, Kaliningrad, Voznesen'ye, Cherepovets, Kuybyshev, Rostov, Kalach and Astrakhan'. It is necessary to facilitate the effective and year-round operation of a new drydock with a 4,500 ton load capacity in Volgorechensk. Worthy of a positive evaluation is the work of the Northwestern Steamship Line involving the docking of over 100 large vessels during the winter repair period. The productive capacity of the line's ship repair enterprises has been doubled over the past decade.

Beginning in 1979, by order of the RSFSR River Fleet Ministry, a directive schedule for submitting vessels to medium repair with its labor intensive work is being placed into effect. The order provides for the uniform

distribution of this work over the entire repair period, a procedure which will permit us to eradicate the established practice of submitting a large portion of the fleet to technical readiness checks immediately before the beginning of the navigation period. This measure, aimed at providing for the timely preparation of the entire fleet for navigation, will require a more precise organization of repair work from the very beginning of the ship repair period.

Responsible tasks confront the workers of our material-technical supply services in seeing to it that repair yards are provided with materials, with replacement spare parts, equipment and, in particular, with fuel.

A great deal of attention should be devoted to providing ship repair enterprises with workers, this primarily through the wide-scale attraction of crews to repair work on their own ships. It is necessary to expand the training of crews and to teach them ship repair specialties. By the way, in a number of steamship lines, for example the Irtysh line, the teaching of ship repair specialties to crews has not been so organized as to satisfy the requirement for qualified workers. Only this can explain the fact that, in order to complete repair work on the fleet, it was necessary to send over 100 ship repair specialists from the enterprises of other steamship lines to the Irtysh line in the Spring of 1979.

The success of our navigation in this, the last year of the 10th Five-Year Plan, depends to a significant degree on the work of our ship repair industry. That industry has large resources with which to repair the entire transport, technical and auxiliary fleet in a timely and qualitative manner. The point is to see that these resources are utilized skilfully and fully.

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DEVELOPMENT OF NEW SMALL FISHING VESSELS DETAILED

Leningrad SUDOSTROYENIYE in Russian No 12, Dec 79 pp 3-4

[Article by A. I. Kuchuk and A. A. Sokorenko]

[Text] The establishment by a majority of countries of coastal fishing zones has led to a sharp reduction of regions for fishing on the shelf. In these circumstances, the principal direction for the development of maritime fishing is to more fully use the resources of one's own coastal fishing zones.

For the development and improvement of coastal fishing in the waters of the Far East basin, the new, small, "Nel'ma"* type MRS-150 seiner was created in two variants:

1) For fishing off the Kamchatka peninsula with a Danish seine or a bottom longline.
2) For fishing in the waters of the seaside and off Sakhalin island with a Danish seine, trawl, purse seine, bottom or squid longline, and also trapping sayry [?] by electric light.

The variants of the 22 meter long and 59 gross register ton MRS-150 differ only in fishing machinery and equipment. Depending on the purpose of the ship, either seine, or trawl and seine winches are installed. A seiner of the second variant can be used effectively by fishing organizations under conditions of changing forecasts.

The single deck ship has a steel hull with simplified lines and with the superstructure situated in the bow. The tubular mast has a cargo boom and a boom with a powered block. Differing from the traditional arrangement of small seiners having the machinery space in a forward or intermediate position, on the MRS-150, the 150 horsepower diesel power plant driving a shrouded propeller is situated aft of the midship section. With such an arrangement, the variable loads (the catch, and the ship's principal supplies) are situated in the middle part of the ship. This keeps the trim stabilized with a small draft at the stern. The constant trim by the stern assures good sea keeping qualities.

*SUDOSTROYENIYE No. 7 1975

The First and Second Variants of Seiner MRS-150

In 1976-1977 acceptance and comprehensive operational trials were carried out on the leading seiners of the type. The acceptance commission gave them a positive evaluation inasmuch as, by comparison with the existing MRS-80 and RB-80 ships, the MRS-150 seiners have a larger area of navigation, improved habitability, modern fishing machinery, navigating and fish-finding equipment, and the provision of container stowage for the catch. The small draft allows the ships to proceed right up to the piers of existing fish combines including those situated at the mouths of shallow rivers. In winter, the ship can be lifted ashore with the simplest lifting facilities.

For the first time in domestic fishery practice, in order to mechanize the labor-consuming operations with the trawl, the winch on these small ships has three drums on one of which the trawl is wound up. The use of such a winch made possible a reduction in the size of the fishing deck and the time for recovery of the trawl. It improved conditions for the repair of fishing gear and saved labor.

The application of the container system for sorting and transporting the catch is also a novelty. It permits rapid loading and unloading operations. Eight containers in two tiers are stowed in the fish hold in the middle part of the ship. The trial set of containers worked well in the tests. Their use on the MRS-150 ships allows, all at once, the sorting, immediately at the fishery, of four kinds of fish, the easing of the work of the fishermen, the reduction of the idle time of the ships in off-loading the catch, the reduction of the number of personnel occupied in these operations, and it improves the sorting of the product.

In connection with the frequently changing fishing conditions, a necessity develops for reequipping ships for work with fishing gear not considered in the design. To assure the possibility of adding equipment, the seiner was designed with excess freeboard. The stability required by the USSR Register for the first variant of the ship is assured by the relationships of the main dimensions and the hull without the use of solid ballast. The reserve stability of the reequipped ship is assured by the installation of 5 tons of solid ballast, and this allows the ships of the first variant, in the process of their operation, to be additionally equipped with a purse seine, trawl, squid loglines, traps for catching sairy [?], crabbing nets, dredges, and other equipment.

Serial production of the new seiners will begin this year. The modernized ships will enable further development of coastal fishing.

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STATE QUALITY MARK FOR TRAWLER-SEINER, HYDROFOIL

Leningrad SUDOSTROYENIYE in Russian No 12, Dec 79 p 16

[News item]

[Text] The State Mark of Quality has been conferred on the "Al'pinist" type medium, refrigerated, trawler-seiners. They are designed for fishing with a purse seine or with bottom and variable depth trawls, and for the short-time storage of the catch in frozen or cooled form.

The "Al'pinist" Type Trawler-Seiner

The trawler-seiner was constructed to the USSR Register classification: KM * L2 [1] (fishing). It is a steel, single screw, single deck motorship with an elongated forecastle and a stern slip. The pilot house is situated forward and the machinery space is in the central portion of the ship.

Principal Characteristics

Length between perpendiculars	46.2	meters
Beam	10.5	"
Height at side amidships	6.0	"
Specification draft	4.3	"
Maximum displacement	1202	tons
Deadweight	322	"
Net capacity of cargo spaces with refrigerated products	218	cubic meters
Speed	13	knots
Endurance at economic speed	7600	miles
Main engine power	1320	horsepower

The trawler-seiner is a high productivity fishing ship. Ships of this type have powerful fishing machinery, thrusters, fish-finding equipment, instruments for monitoring parameters of the trawl, and so on. The ability of the ship's company to convert from one form of fishing to the other at sea substantially broadens fishing possiblities and is an important advantage of the type.

In the process of improving the units being serially constructed by taking into account experience in the operation of them and in preparation for certification for the State Mark of Quality, specific deficienies in the procurement of equipment were eliminated. Obsolete equipment (the boiler unit, cargo winches, fish-finding gear, radio equipment, and others) were replaced and that permitted obtaining the high indicators of reliability of the ship, responding to modern standards and requirements.

The certified ship is substantially superior to similar domestic and foreign ships according to such indicators as: endurance, propulsion power, the pull and speed of trawling, the power available per hand, the pulling force and wire capacity of winches, the degree of automation, and indicators of reliability. It is also superior according to the comprehensive indicator of effectiveness - the adjusted expenditure per unit of product.

* * *

At the end of the past year, the passenger hydrofoil motorship "Voskhod-2" was awarded the State Mark of Quality. The motorship is designed for fast passenger transport on clear days in rivers, lakes, reservoirs and canals, in a moderate climate. It is a further development of the "Raketa" type of motorship.

The ship is constructed to classification "O" of the River Register of the RSFSR.

The Passenger Hydrofoil Craft "Voskhod-2"

Principal Characteristics

Length	27.6 meters
Beam	6.2 "
Height underway on foils	5.7 "
Draft " " "	1.1 "
Full load displacement	28 tons
Passenger capacity	71-77 persons
Nominal main engine power	1000 horsepower
Speed in still water	60 kilometers per hour
Endurance	500 kilometers

The hull of the motorship is welded and the superstructure is riveted using panels assembled by spot welding. There are two lounges for passengers, one forward for 17 passengers and one aft for 54. The lounges are equipped with soft aircraft-type chairs with reclining backs. The windows afford a good view. The decks in the passenger and service compartments are covered with fleecy carpets.

Having all the advantages of "Raketa", the "Voskhod-2", with the same power plant, and almost the same principal dimensions, has increased passenger capacity and improved seakeeping. The noise level in the passenger and service compartments has been significantly lowered, and comfort has been improved by the efficient arrangement and equipping of the compartments using modern finishing materials.

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SEAGOING PASSENGER SIDE-WALL HOVERCRAFT 'CHAYKA'

Leningrad SUDOSTROYENIYE in Russian No 1, Jan 80 pp 5-7

[Article by V. K. Zorastrov, V. M. Tulubenskiy, and V. K. Shikin]

[Text] Passenger transport in the coastal zones of the internal seas of the country is accomplished primarily with displacement ships of the "Raduga" or "Aleksandr Grin" types having 12 to 14 knot speeds, or with the fast "Kometa" type hydrofoil ships. Increasing the speed of small displacement ships above 17 to 18 knots is economically unjustified because of an extremely sharp growth in the power required. At the same time, the limiting depths in coastal regions, and the complication of building berthing facilities, in many cases do not permit the operation on local lines of fast hydrofoil craft whose draft is more than 3 meters.

The demands being made for fast passenger ships for coastal lines in regions with limited depth, in large degree, are met by the side-wall hovercraft. They are notable for small draft, good maneuverability, satisfactory seaworthiness, relatively simple construction, and economy. The small draft, in combination with protected water-jet propulsion,allows these ships to be moored at existing berthing facilities for small displacement ships and in many cases to pick up passengers from shores without landing facilities.

The first domestic, seagoing, passenger, side-wall hovercraft "Chayka" is intended for service in shallow coastal regions (Figure 1)."Chayka", a motorship, is a hovercraft with water-jet propulsors arranged on the sides, and with the machinery compartment in the stern and the pilot house in the bow. The ship is designed for passenger transport on clear days in up to force 4 [rough] seas. The USSR Register classification KM * II [1] (passenger hovercraft) has been conferred on the ship.

The general arrangement of "Chayka" and the furnishings of the compartments assure the comfort of passengers and crew. In the forward part of the superstructure is the pilot house, a cabin for off-duty crewmen, and a companionway. The disposition of the pilot house on the starboard side at the bow provides good visibility for the pilot and is characteristic of hovercraft. The passengers are accomodated in the lounge in the middle

part of the ship. It is equipped with a system of ventilation and hot-air heating. The passenger lounge has light chairs of special design under the seats of which are life-jackets. The large windows give the passengers a good view. (Figure 2)

Figure 1. The Side-Wall Hovercraft "Chayka"

Principal Characteristics

Length overall	26.7 meters
Beam "	7.1 "
Beam amidships	6.0 "
Draft in displacement condition	1.27 "
Draft underway on air cushion, at bow	0.1 "
" " " " " " stern	0.8 "
Displacement	47.5 tons
Passenger capacity	80 persons
Speed	23 knots
Crew	6 persons
Fuel limited endurance	190 miles

For the interior finish of the compartments, synthetic decorative materials and plastics were used primarily. The decks in the passenger lounge, the pilot house, and crew's off-duty cabin are covered with synthetic carpets, and the companion ways with a colorful polyvinylchloride linoleum. For covering the overhead, an aircraft type leather substitute was used.

Placing the auxiliary compartments between the passenger lounge and the machinery spaces eases efforts to prevent noise-penetration into the lounge when the engines are operating. This arrangement, in combination with the

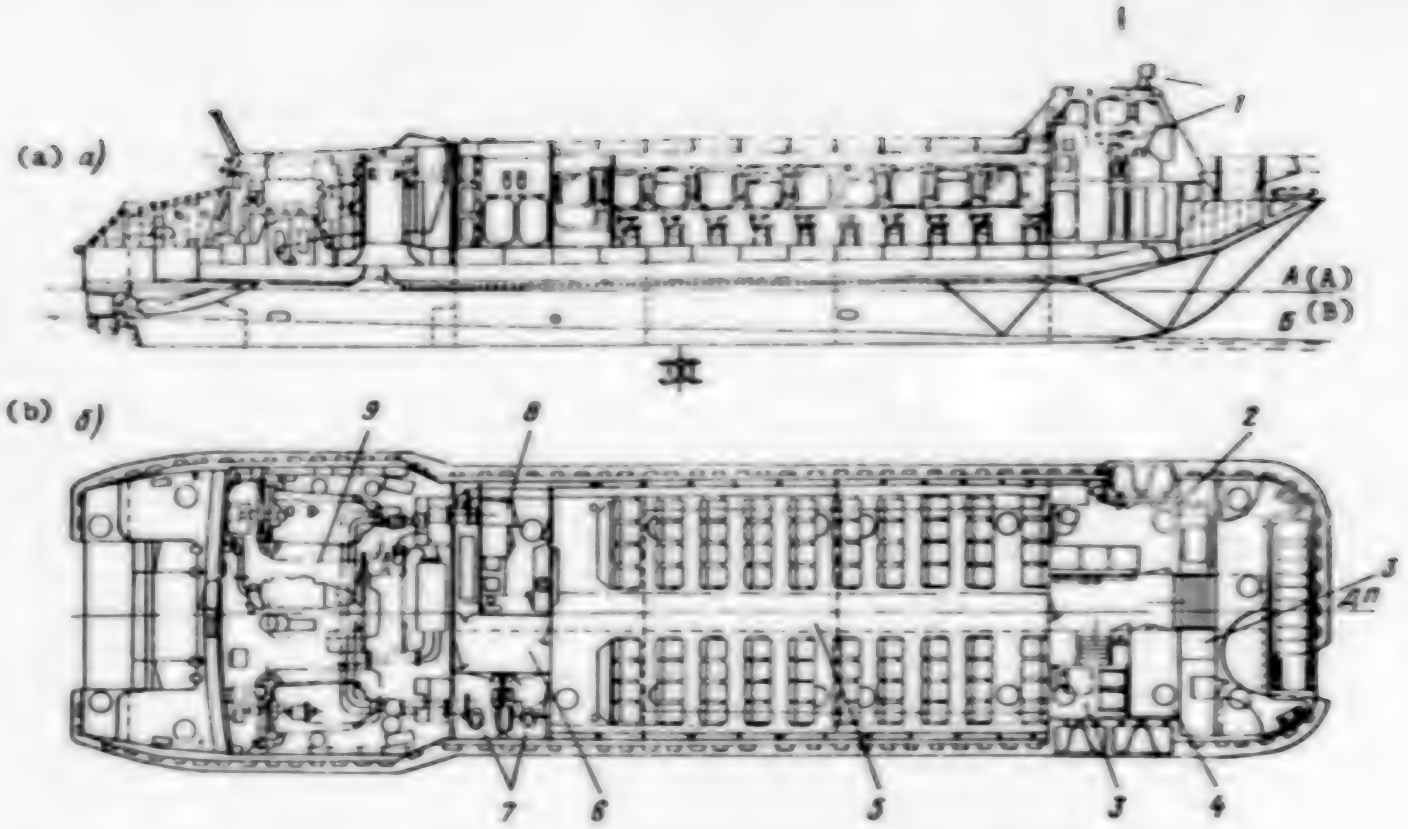

Figure 2. Longitudinal Cross Section (a) and Plan of the Passenger Deck (b) of the Hovercraft "Chayka"

A. Waterline in displacement condition. B. Waterline underway on air cushion.

1. Pilot house, 2. Crew's off-duty cabin, 3. Storeroom, 4. Baggage compartment, 5. Passenger lounge, 6. Companionway, 7. Toilets, 8. Buffet, 9. Machinery space.

installation of all engines on vibration-isolating mounts and the installation of sound insulation on the bulkheads of the machinery compartment assures comfortable conditions in the lounge and pilot house.

In the bow there is a section of open deck from which passengers may be landed either on a shore without landing facilities by means of an articulated gangway with a hydraulic drive, or onto a pier designed for the berthing of ships of the local service. (Figure 3)

Figure 3. The Ship Stopping on an Unequipped Shore

The basic hull material is the aluminum alloy AMg-61. The decks, superstructure, pilot house, and enclosures are made from alloy AMg-5. The welded hull and the riveted superstructure and pilot house have longitudinal systems of framing. The lower parts of the shell of the side walls are made from single-piece, pressed panels, and the bottom of the hull is made from corrugated sheets.

The hull below the passenger deck is divided by transverse bulkheads into seven watertight compartments,access to which is through hatches in the deck. The unsinkability of the ship is assured during the flooding of any one of the compartments.

The machinery plant consists of two 3D12N-520 main engines driving waterjet propulsors, and one PD6S-150A engine driving the cushion airblower. The 3D12N-520 main engine is one of the modifications of the widely used type D12 diesel. It is a light (3.54 kilograms per kilowatt), irreversible, high-speed, four-cycle, V-shaped engine with a gasturbine supercharger having a rated power of 383 kilowatts at 1500 RPM. Fire-resisting insulation is provided on the sides, the forward bulkhead, and the overhead of the machinery compartment using an inert basaltic fiber secured by perforated sheets of titanium alloy.

The sources of electrical energy are: a type KG-2.9, 2.9 kilowatt, 28 volt generator driven by a power take-off shaft from a main engine, and three type G-732, 1.2 kilowatt, 28 volt charging generators mounted on the main engines. The ship has three groups of batteries. One group, consisting of two type 6STK-180M storage batteries is for supplying ship's needs. The second group, consisting of four storage batteries of the same type, is for starting the diesels and also for energizing the systems for control of the diesels and the system of emergency warning signals. An inverter is installed to supply alternating current power needs. When at a shore berth, it is provided that electrical energy be obtained from the shore circuit.

The ship has two, two-stage, water-jet propulsors. Their water inlet scoops are arranged in the side walls and the pump parts, each of which consists of two rotors and two straightening devices, are carried out [discharge] behind the transoms of the side walls. The NTs6 centrifugal air blower driven by a 110 kilowatt, 1500 RPM engine, delivers 20 cubic meters per second in creating the air cushion. The engine is connected to the blower by a universal joint and a torque-limited coupling.

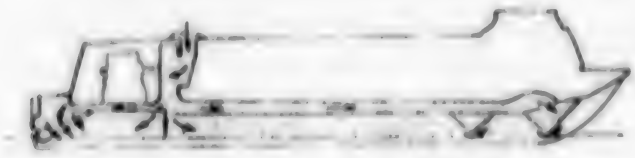

Figure 4. Diagram of the Formation of the Air Cushion

The chamber scheme for the formation of the air cushion was adopted for the ship (Figure 4). The region of increased pressure under the ship is enclosed along the sides by the water-displacing side walls, and at the bow and stern by flexible curtains. There are two successive bow curtains consisting of open-type segmented elements. Repair or replacement of a section of the bow curtain can be done without lifting the ship from the water. It can be done with the bow pushed up on a gently sloping shore. The balloon type, two-tier, stern flexible curtain is divided into four independent sections, to which air is delivered from the blower through a special duct. The sections of the stern curtain are secured to special hinged areas that permit their inspection and maintenance while afloat.

Steering the ship when going ahead or astern, and also the reversing of the ship is effected by reversing and steering devices situated behind the water-jet propulsors. Each of these devices has a plate-type rudder and a rotatable cylinder with straightening vanes.

The ship has a 100 kilogram Matrosov anchor and a hydraulic winch for raising and lowering it. PSN-10M and PSN-6M inflatable life rafts are stowed in containers along the sides of the ship. The number of rafts is designed to accomodate 100% of the passengers and crew. The floats are jettisoned by remote control from the landing places at the bow and the stern. There also are individual life saving means - life rings and life jackets. The ship has firefighting, drainage, and ballast systems, and also a system for collection and discharge of oily water from the machinery spaces. There are systems for ventilation and hot-air heating, fresh water, and sewage systems to provide the necessary sanitary facilities for passengers and crew.

The scope of the remote control, monitoring, and signalling equipment for the power plant and systems was selected from a design for control of the ship by one man, and without a continuous watch in the engine room.

Two-way communication with the shore and other ships is accomplished with a "Lastochka" radio-telephone transceiver, a "Kater" ultrashortwave radio, and a "Plot-M" portable emergency radio transceiver. A "Ryabin" installation is used for communication wthin the ship and for relaying announcements. To provide for the navigation of the ship near shore, in straits, and during limited visibility, the ship has an "Omega" radar.

The entry into operation of the first domestic seagoing side-wall hovercraft "Chayka", and the further development of this type of ship creates the necessary prerequisites for the organization of fast passenger transport in coastal regions having limited depth. Especially promising in this plan are the lines in the Azov and Baltic basins. The practical use of ships of the "Chayka" type will allow the accumulation of necessary experience and the outlining of ways to create larger hovercraft for the maritime fleet.

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MISCELLANEOUS

TRANSPORT CONSTRUCTION FOR WESTERN SIBERIA DISCUSSED

Moscow GUDOK in Russian 4 May 80 p 1

[Article by N. I. Litvin, first deputy minister of transport construction: "Transport Builders to the Oil and Gas Complex"]

[Text] Today Tyumenskaya Oblast is the country's main fuel and energy base. At the end of April, the 1-billionth ton of oil was pumped out here since the start of the 9th Five-Year Plan. In truth, the growth rates are magnificent. For all of 1964, 209,000 tons were recovered in all, and now 806,000 tons are pumped in a single day.

According to available data, the underground storehouses of the region may also insure the further development of the oil and gas industry, but it is necessary to increase well construction in order to bring this about, and that means that more of various kinds of equipment, machinery, materials and working hands will be required.

In the last 15 years, the population of the oblast has increased by a factor of 1.5, and this process continues. It is necessary to intensify construction of housing, cultural and domestic and social projects and highway construction in order to insure good conditions for all. A meeting of the Party-economic aktiv of Tyumenskaya and Tomskaya Oblasts was devoted to discussion of this important question. Specific ways to solve the most important problems were planned out at this meeting.

The GUDOK correspondent asked First Deputy Minister of Transport Construction N. I. Litvin to tell us what transport builders are doing and will still have to do for the further development of the Western Siberian oil and gas complex.

Successful development of any industrial region is unthinkable without steady transport links. They are of particular significance for the Western Siberian complex, in the first place, because of its distance from industrial centers; in the second, because it is spread out over a vast territory (it is possible to cut out almost 3 countries the size of France from Tyumenskaya Oblast) and, finally, in view of the particular climatic and natural conditions. The fact is that in the summer many places are "accessible only by helicopter."

The helicopter is, of course, a convenient machine, but to transport cargo such as reinforced concrete castings or even steel pipes over large distances is not useful, as you yourself understand. We need railroads and highways for this purpose. The transport builders are putting them through. They are erecting river ports here, bridges and air fields.

In recent years the railroad lines between Tyumen-Tobol'sk, Tobol'sk-Surgut and Surgut-Nizhnevartovsk have become operational. The rails of the Surgut-Urengoy mainline are moving further and further north. Today more than 1,300 kilometers of main routes alone lie over Tyumenskaya soil.

During this same time, more than 1,400 kilometers and a number of river ports--among them large ones in Tyumen', Tobol'sk and Surgut--have been built. Many bridges have been erected, including special-purpose bridges over the Ob' and its tributary. In short, for the 4 years of the five-year plan overall, we have fulfilled the plan for construction and installation operations, started up our primary projects. But there are also expenses.

In life, unfortunately, everything does not go as smoothly as might be desired. For 3 years the collective of the "Tyumenstroyput'" administration successfully coped with the plan. Even last year it fulfilled it for volume of construction and installation operations. But the railroad they were building did not reach the intended point. In the first quarter, an unprecedentedly harsh winter hindered them, then very high levels of spring flooding (almost reaching the 100-year flood level). Water stood for a long time, and all of the winter transport connections were broken.

Thus the builders lost almost an entire quarter for work. Then when, in spite of the rainy summer, they nevertheless started to make up what they had missed, they ran out of ties, and they greeted the New Year 1980 at the 407th instead of the 470th kilometer.

In order to reach Urengoy this year, they still have to lay more than 170 kilometers of mainline and 30 kilometers of station track, pour more than 10 million cubic meters of soil and build 126 artificial structures, including 5 large metal bridges.

In the first quarter of this year, affairs went significantly better for the Tyumen builders. Having widely developed a socialist competition to meet the 110 anniversary of the birth of V. I. Lenin in worthy fashion and fulfilling their socialist commitments, the builders brought the track up to Tarko-Sale, the regional center of the Yamalo-Nenetskiy National

Okrug, five days earlier than planned. Now the rails have passed even farther, but there is still much work ahead, and the main difficulty is the bridges. It is very important that the span structures, the metal, the reinforced concrete, the rails and the ties arrive on time. But one thing is certain. This year the railroad will arrive in Urengoy and working train operation will begin!

No less complex and significant matters are awaiting the road-building trusts. They have to put 415 kilometers of highways into operation and install 75,000 square meters of airfield surfaces; hydraulic engineers should build wharves in Surgut, Nizhnevartovsk and at other points. One has to know the Tyumen marshes, multiplied by permafrost, in order to evaluate the difficulty of the task on its own merits.

Last year the trusts "Tyumendorstroy", "Nizhnevartovskdorstroy" and "Mostostroy-11" went into debt for 30 kilometers of highways. In addition to shortcomings in the organization of the builders' work, the fact that industry did not deliver the necessary amounts of reinforced concrete slabs for the highway roadways and light-alloyed steels for fabrication of bridge spans had an effect as well.

But the situation improved for highway workers and hydraulic engineers since the start of this year, although earth-moving operations and installation of roadbeds are still not fully developed on a number of highway routes. Matters at the Nizhnevartovsk airfield and at the river ports in Sergin and Nizhnevartovsk are moving slowly.

I visited Western Siberia with other comrades before the May holidays. We familiarized ourselves with the situation and then, thought up supplementary measures for strengthening operations at transport projects together with Central Board and Trust managers. By the way, very much cargo comes by rail and by water for them. Making use of the opportunity, we would approach the railroad workers and river workers with a request for help in moving cargo for construction projects in Tyumenskiy Kray rapidly.

The temporary operations department of "Tyumenstroyput'" administration which organizes movement on the Surgut-Urengoy line should also devote their attention to this matter. It is necessary to be concerned with the timely unloading of rolling stock and the rapid removal of all arriving cargo from warehouses at the railhead.

Party, trade union and Komsomol organizations should constantly explain to people the national significance of intensifying construction in the Western Siberian oil and gas complex and organize a labor competition for the most rapid fulfillment of all designated plans.

In conclusion, I wish to say a few words about the prospects for the near future. As is always the case, that which is planned exceeds that which has already been done significantly: the rule for our socialist development is such. In the years 1981-1983 transport builders must lay 3.6

times more of just highways than have been built during the past 3 years of the 10th Five-Year Plan. It is true that the union republics will aid us in this matter. We are now concluding an agreement with them concerning the sizes and titles of impending construction projects. It makes us very happy that a number of republics have expressed a desire to begin basic operations this year. Under these conditions, there is a need for the Ministries of the Oil and Gas Industry to examine and confirm the list of construction projects and the size of operations more rapidly and to compile and issue technical specifications for highway construction.

And meanwhile, the most important thing for us is to successfully fulfill the quotas for this year. We wish to express our assurance that transport builders will do everything possible to cope with them by the deadline.

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